

**EXPLORING CHALLENGES OF TEACHING AND LEARNING MAP WORK IN GRADE 12:  
A CASE OF MANKWENG CIRCUIT, LIMPOPO PROVINCE**

by

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Submitted in the fulfilment of the requirements for the degree of

**MASTER OF EDUCATION**

in

**CURRICULUM STUDIES**

in the

**FACULTY OF HUMANITIES**

**(School of Education)**

at the

**UNIVERSITY OF LIMPOPO**

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**2024**

## **DECLARATION**

I hereby declare that the work titled "**Exploring Challenges of Teaching and Learning Map Work in Grade 12: A Case Study of Mankweng Circuit, Limpopo Province**", is entirely original to me, has been properly cited and acknowledged (see the list of sources I used, which is attached), and has never before been submitted for credit at another university.

**Surname, Initials**

**Date**

RAKGOALE M.S

15 January 2023

## **DEDICATION**

This study is dedicated to my late brother (Motimele Raymond Mokou); my Grandparents, Rakgoale Regina and Rakgoale Wellington; my mom, Rakgoale Denny; my daughters Rakgoale Casey and Rakgoale Arianna, my son Rakgoale Zinedine and not to forget my Supervisor Dr Malahlela and to the rest of my lovely family and friends.

## **ACKNOWLEDGEMENTS**

God is good all the time. I want to thank the man up there because without him, I would not have survived. He is the one that guides our lives, so he deserves all the praises. I likewise thank my amazing supervisor Dr Malahlela Tebogo for his motivation, direction, and inspiration through this difficult, learning and fruitful journey. Without him, I wouldn't have finished. To my whole family and friends, thanks for the support you gave me throughout the study. I love you so much. A special thanks to Matshanisi Ndivhuwo for your support. God bless you. A very big thank you to all the HODs, the teachers and learners in Mankweng Circuit who participated in this study. You are all highly appreciated.

God bless you all!

"I the Lord will make it happen when the timing is right." Isaiah. 60:22

## **ABSTRACT**

Geography map work teaching in South Africa has been a serious challenge. The poor performance in map work in recent years is evidence that a lot still needs to be done to address this problem. Mankweng Circuit in Capricorn District of Limpopo is no exception. Hence the purpose of this study was to explore challenges associated with the teaching and learning of Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province. The researcher used the qualitative research approach. The study followed the Interpretivism research paradigm and the exploratory research design. The study was guided by Lev Vygsky's constructivism theory. To gain access to participants, the researcher obtained ethical clearance from the University's Ethics and Research Committee. All participants in this study were required to sign the consent form and were informed of the purpose of the study. Parents were involved for children under the age of 16 and all participants were informed that participation in this study was voluntary. Furthermore, the researcher ensured that identities of all participants remained confidential. The sample of this study consisted of twelve participants comprising three teachers, three HODs and six learners from three schools, who were selected because interviews, Observations and Document Analysis were used as method of data collection. Data was analysed thematically. The findings showed that map interpretation is still a challenge to learners. Findings further showed that both teachers and learners struggle with GIS. The study further recommended that the Department of Education should arrange regular GIS workshops where they provide teachers and learners with specialists to assist them with the GIS section.

## **LIST OF ABBREVIATIONS**

1. GIS - Geographic Information System
2. GPS- Global Positioning System
3. MT - Mother Tongue
4. ICT - Information and Communication Technology
5. ATP - Annual Teaching Plan
6. NSC- National Senior Certificate
7. LTMS- Learner Teacher Support Materials
8. NCE- National Certificate in Education
9. LoLT- Language of Learning and Teaching

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## **CHAPTER 1**

### **INTRODUCTION AND BACKGROUND**

The declining performance in Geography in the past five years motivated the researcher to undertake this study. A claim by Demirci (2008) showed that there is a decline in the use of GIS in secondary schools Geography lesson in Turkey which affects map work performance. Alhosani (2015) study revealed that map work Geographic skills are generally weak among secondary-school graduates in the United Arab Emirates.

The foundation of Geography instruction is examining current situations Kerski (2003) which is why Geography map work is crucial in the twenty-first century. Using maps, in accordance with Mackintosh (2000), improves students' graphic literacy, which is a crucial life skill that children must acquire beginning in the primary grades.

This chapter covers the history of the problem, motivation, definitions of concepts, problem statement, goal of the study, research questions, and the research technique. The significance of the study, ethical issues, and a brief overview of the relevant literature are also discussed in this chapter. The chapter concludes with a thesis outline and a conclusion.

#### **1.1 BACKGROUND AND MOTIVATION**

No matter the level at which Geography is being studied, maps should serve as the basic tools of the subject (Hurry, 2015). Teaching Geography map work in a Grade 12 syllabus is still a great challenge to many educators. Previous research by Demirci (2008), showed that lack of resources and tools are one of the difficulties in

effectively incorporating Geographic information system (GIS) into Turkey's Geography curriculum. Artvinli's (2020) study showed a comparison of Turkey and England in terms of how the Geography textbook approaches map abilities. The study revealed that Geography textbooks are theoretical, useful, and current unlike Turkey textbooks which could not go beyond theoretical knowledge. Dolan (2014) in her study of student teachers in Stranmillis University College Northern Ireland found that a background in Geography was not necessarily advantageous when it comes to teaching.

Okwilagwe (2012) study shows that countries like Nigeria are also faced with the same problem. Therefore, South Africa is no exception. According to Okwilagwe (2012), 95, 2% of educators in Nigeria believe that map work should be dropped from the school Geography curriculum. In Ethiopian schools, students' performance and practice with reading maps is affected by a variety of curriculum- and school-related problems, including insufficient time allocated for teaching Geography and a lack of teaching resources (Siddu, 2012). Gikunda (2016) study of factors affecting teacher performance in implementing geography curricula in public secondary schools in Kenya found that a lack of instructional resources in some schools affected how teachers taught geography.

There was a study by Ahiaku, Mncube and Sunday (2019), which showed that 77, 5 % of educators in South Africa are not interested in teaching map work because of calculations and the GIS section. The study focused more on educators' concerns and challenges while teaching map work in South African schools. Not everyone is involved like the Head of Department (HODs) and learners. These facts indicate that the teaching of Geography, particularly map work, is a challenge to learners as their performance in the subject has been constantly declining. A major factor in the ongoing low achievement was the lack of learner-teacher support materials in Geography map work. The continuing poor performance in map work motivated the researcher to undertake this study. The challenges are experienced by teachers, HODs and learners. Most studies focus more on teachers' experiences and teaching strategies used when teaching Geography in Grade 12. The study explored challenges encountered by teachers, HODs and learners when teaching and learning Geography map work in Mankweng Circuit in Limpopo Province. The

motivation of this study was a decline in student performance in Geography as a result of ineffective map work instruction.

Table 1.1 Overall achievement rates in Geography (2016-2020)

| Year | No. wrote | No. achieved at 30% and above | % Achieved at 40% and above | No. Achieved at 40% and above | % Achieved at 40% and above |
|------|-----------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|
| 2016 | 302 682   | 231 641                       | 76,5                        | 145 726                       | 48,1                        |
| 2017 | 276 771   | 212 954                       | 76,9                        | 138 704                       | 50,1                        |
| 2018 | 269 621   | 200 116                       | 74,2                        | 126 011                       | 46,7                        |
| 2019 | 271 806   | 218 821                       | 80,5                        | 144 755                       | 53,3                        |
| 2020 | 287 629   | 216 467                       | 75,3                        | 132 955                       | 46,2                        |

**Adapted from: NCS Examination Diagnostic Report for Geography, DBE, 2020:103**

The performance trend proved that performance in Geography in the past five years has not been consistent but continuously declining. The National Senior Certificate NSC Examination diagnostic report for Geography Education (2020:103) showed that although the number of learners writing Geography increased in 2020, the number of passes at 40% and 30% fell in 2020 after a notable improvement in 2019. This was disheartening.

It further demonstrated that candidates are demonstrating a greater comprehension of Geographical processes and are able to explain things more clearly than in the past in shorter response questions.

Nonetheless, they still have problems with Paper 2 on map calculations and GIS. Adeyemi (2014:200-206) claims that students struggle with map work and hence perform poorly in Geography as a whole.

## 1.2 PROBLEM STATEMENT

Mankweng Circuit in Capricorn South District in Limpopo Province, like many other circuits in the country, faces challenges of teaching Geography map work in Grade 12. The NCS Examination Diagnostic Reports for Geography Department of Basic Education (2015:100) showed that learners continue to struggle with calculations when they have to calculate area on the orthophoto map (Mukondeleli, 2018). The poor performance of learners in Geography in general has been a serious problem to educators currently and in previous years. Maduane (2016) confirmed that code-switching is a teaching and learning barrier and a major cause of poor performance in map work. The results of the study showed that in order to ensure that students are learning geography properly, 31% to 75% of teachers confirmed that code-switching was employed by geography teachers.

A study by Ahiaku, Mncube and Sunday (2019) focused on teachers' challenges and concerns when teaching map work. The study investigated teachers and not learners and HODs. Therefore, this study investigates in-depth challenges associated with the teaching and learning of Geography Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province.

### **1.3 THE PURPOSE OF THE STUDY**

The purpose of the study was to examine challenges related to the teaching and learning of Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province.

#### **1.3.1 OBJECTIVES**

- 1 To explore challenges faced by teachers and HODs in the teaching of grade 12 map work.
- 2 To identify challenges faced by learners in learning map work.
- 3 To suggest possible strategies that can be used in the teaching and learning of grade 12 map work.

## **1.4 RESEARCH QUESTION**

### **1.4.1 The main research question.**

What are the challenges related with the teaching and learning of grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province?

### **1.4.2 Sub-questions**

1. What are the challenges faced by teachers and HODs in the teaching of grade 12 map work?
2. What are some of the challenges faced by learners in learning map work?
3. What are the possible methods and strategies that can be used in the teaching and learning of grade 12 map work?

## **1.5 RESEARCH METHODOLOGY**

Cresswell (2009) defines research methodology as various approaches, processes, and procedures used to carry out a study design.

### **1.5.1 Research Design**

This study used the exploratory research design, which requires a thorough discussion of a case in relation to its larger context in an effort to comprehend the specifics of the case (Plooy-Cilliers, 2014). The design was relevant to the study because the purpose was to explore challenges of teaching and learning map work in Grade 12. According to Mkhabela (2005), a research design is used to explore, gain new insights, and discover new ideas related to the phenomenon under study.



So, the design is relevant to this study since the phenomenon under study has rarely been investigated, and not much is known about challenges of teaching and learning Geography map work in Grade 12.

### **1.5.2 Research Paradigm**

This study used the interpretivism research paradigm which contends that as humans do not live in laboratories and are constantly influenced by their surroundings, it is inappropriate to research them in laboratory settings (Plooy-Cilliers, 2014). The study was informed by the interpretivism phenomenology tradition, which holds that people give meaning to both their own and other people's behaviors because they believe that human action is meaningful (Plooy-Cilliers, 2014; Bryman, 2012). Because the researcher's aim was to evaluate and understand grade 12 teachers', learners', and HODs' point of view on the difficulties of teaching and learning map work, the paradigm was pertinent to the study.

### **1.5.3 Research approach**

This study was informed by the qualitative research method, which examines the fundamental characteristics of subjective experiences and the significance attached to specific phenomena (Plooy-Cilliers, 2014). Since this method is interested in the depth of human experiences, it allowed the researcher to gather challenges that teachers, learners and HODs come across in the teaching and learning of Geography map work in Grade 12.

### **1.5.4 Sampling**

Maree (2010) defines sampling as a method used to choose a subset of the population for the study. This study adopted purposive sampling, which enables the researcher to deliberately select the components that she wants to include in a

sample (Plooy-Cilliers, 2014). This method was selected because it allows the researcher to select participants that add value to the study and to gather the necessary knowledge. Only teachers, HODs and learners who are affected by this problem form part of the study. The researcher sampled 3 teachers, 3 HODs and 6 learners in Mankweng Circuit who are affected by this problem. The researcher selected the sample size because only interviews are used as a method of data gathering and because the study focuses on teachers, HODs and learners who are part of Geography map work teaching in Grade 12 until data saturation is achieved. The sample consisted of 3 schools. In each school, 1 teacher, 1 HOD and 2 learners were sampled to participate in the study. The sample was made up of 12 participants.

## **1.5.5 Data collection**

### **1.5.5.1 In-depth interview**

An in-depth interview was employed to collect data. According to Plooy-Cilliers (2014), with the use of an in-depth interview, you can ask participants questions to learn more about their perspectives, thoughts, and beliefs with regard to a specific problem. This method was selected because it gives you an opportunity to ask participants to clarify points and you can easily ask follow-up questions. There is an interview guide for each group. The interviews were done after school to avoid disrupting the teaching and learning process.

### **1.5.5.2 Observations**

Observations were used as another method of data collection to supplement the interviews. The study used the on-site observation. The on-site observation technique was selected because it ensures the accuracy of the data collection to accommodate the necessary latitude that was available in data collection through the use of interviews (Maduane, 2016). In order to gauge their attitudes on geography, the researcher observed the teachers and students as well as conducted interviews

with them. To see if they have a favourable attitude about geography, the researcher watched them.

### **1.5.5.3 Document analysis**

The study also used document analysis technique. The goal of employing documentary analysis is to close any gaps that could arise as a result of the use of interviews and observations as a method of data collection being weak (Maduane, 2016). The researcher employed document analysis to ascertain if teachers record student performance in both formal and informal assessments in order to recognize students who are struggling and need additional support.

### **1.5.6 Data analysis**

Data were analysed using thematic analysis. Plooy-Cilliers (2014) states that the idea behind thematic analysis is to chunk data together before assigning it to larger categories of related meanings. In this study, the researcher analysed the data according to the eight steps (Zhang, 2009). These steps were: 1 prepare the data; 2 define the coding unit; 3 create classifications and a coding system or conceptual framework; 4 code the texts; 5 test your coding on a sample text; 6 assess the uniformity of your coding; 7 make inferences from the coded data (interpret your data); and 8 present your research methods and results. According to Strauss (1987), the objective of qualitative coding is data fragmentation rather than data counting (Plooy-Cilliers, 2014).

## **1.6 QUALITY CRITERIA**

### **1.6.1 Credibility**

Credibility, according to Plooy-Cilliers (2014), is the correctness with which the researcher evaluated the data provided by participants. In order to gather accurate data, the researcher spent a lot of time with participants and established trust with them.

### **1.6.2 Transferability**

Transferability is the ability to use findings in a similar situation for the same outcomes (Plooy-Cilliers, 2014). The researcher ensured transferability by ensuring that the results from the study can be used in other research studies.

### **1.6.3 Dependability**

Dependability is the degree to which the data gathering process, data analysis and the theory derived from the data are all integrated (Lincoln, 1985; Shenton, 2004; Collins, 2003; Plooy-Cilliers, 2014). The researcher used interviews to test the dependability of the study and tried to get the same answers from participants by asking them the same questions. According to Nel (2010), dependability is the likelihood that a study will yield comparable results if it is repeated.

### **1.6.4 Confirmability**

The degree to which the data supports the researcher's findings and analysis is known as confirmability (Plooy-Cilliers, 2014). To help others evaluate the research design, it is necessary for the researcher to adequately define the research process (Collins, 2003; Lincoln, 1985; Shenton, 2004; Plooy-Cilliers, 2014). Confirmability demonstrates the impartiality (objectivity) of the study (Ary, 2006 & Mukondeleli, 2018). In this study, the researcher ensured confirmability by avoiding bias when interpreting data.

## **1.7 ETHICAL CONSIDERATIONS**

### **1.7.1 Permission for the study**

The University's Ethics and Research Committee gave the researcher the go-ahead to conduct the study after receiving their ethical approval. Also, the researcher was granted access to teachers, learners, and heads of department (HODs) who would take part in the study by the Limpopo Provincial Department of Education. The School Governing Body (SGB) was also informed as they form part of the school.

### **1.7.2 Informed consent**

To ensure that the study does not become unethical, participants were required to sign the consent form. They were also informed of the purpose of the study (refer appendix J). To avoid situations where they will show signs of stress and discomfort, the researcher was clear in advance before the participants gave consent to take part in the study, thereby explaining to them what the study was really about and what kind of sensitive information it would likely explore.

### **1.7.3 Consent and children**

The researcher gave the children full information about what the study was really about so that they could give their full consent to take part (refer Appendix D). Parental involvement was required for children under the age of 16 as they did not have maturity to understand the nature and outcome of the study.

### **1.7.4 Parental consent**

To ensure assent, parental consent was given to parents, especially where it was viewed that the child was under aged and therefore, incapable of understanding the implications of taking part in the study. The researcher gave parents a request form,

which informed them about their child's participation in the research process (refer Appendix H).

### **1.7.5 Voluntary participation**

Potential participants were notified that participation in this study was voluntary. The researcher did not force them. They were also told that they can withdraw from the study without consequences.

### **1.7.6 Confidentiality and anonymity**

The researcher ensured that identities of participants remained confidential; that the information they provide would only be used for educational purposes; and that they had the right to access the research report once the study is completed. Furthermore, the researcher treated the participants' information with respect, and ensured that it would not be shown to anyone. Fake names were used rather than their genuine names.

## **1.8 SIGNIFICANCE OF THE STUDY**

- The study will help to improve the performance of Geography map work in Grade 12 in both theory and map work performance.
- The study will also assist in understanding challenges experienced by teachers and learners in the teaching and learning of Geography map work.
- The study will help curriculum developers in the Department of Education in identifying these challenges in order to come up with better strategies and solutions on how Geography map work can be taught.
- The study will increase the corpus of knowledge.

## **1.9 DEFINITION OF KEY TERMS**

### **1.9.1 Geography**

According to Hurry (2015), Geography is the study of how people and their environments interact, as well as the processes that lead to changes in these interactions.

### **1.9.2 Map work**

Map work, which is the study and interpretation of maps, is one of the topics studied in the field of Geography.

### **1.9.3 Teaching**

Teaching is the interaction between teachers and learners in the classroom where teachers equip learners with knowledge.

### **1.9.4 Learning**

Learning occurs when one equips or acquires knowledge and skills through studying, experience or by being taught.

## **1.12 DISSERTATION OUTLINE**

The study comprised five chapters as follows:

### **Chapter 1: Introduction and Background of the study**

This chapter discusses the background and motivation of the problem, definitions of key concepts, the problem statement, the purpose of the study, research questions, research methodology, significance of the study, ethical considerations, a brief literature review of the study and thesis outline.

### **Chapter 2: Literature on challenges of teaching and learning Geography map work**

This chapter outlines the theoretic framework and literature review on the challenges of teaching and learning Geography map work.

### **Chapter 3: Research methodology**

This chapter outlines the research design and method, sampling, data collection, data analysis and ethical considerations.

### **Chapter 4: Discussion/presentation/ interpretation of findings**

The chapter outlines the data analysis, presentations of the study and findings of the study.

### **Chapter 5: Summary, recommendations, and conclusions**

The chapter outlines the summary of the study.

## **1.13 CONCLUSION**

In conclusion, the researcher provided the background and motivation of the problem, defined key concepts, the problem statement, and the purpose of the study, research questions and research methodology. The chapter further discussed the significance of the study, ethical considerations, and a brief literature review. The chapter then concluded with thesis outline. The next chapter presents the literature review.



## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

This chapter presents the role of theory in the study and a brief literature review on challenges of teaching and learning Geography map work in Grade 12. The chapter will focus on international, African, and South African literature on the teaching of Geography map work.

The issues faced by teachers, HODs and students when teaching and learning Geography map work are covered in the literature review, along with solutions that may enhance the teaching and learning of map work in the subject. Since this issue affects both developed and developing nations, the chapter covers South African, African, and international literature in the teaching of Geography map work.

#### **2.2 ROLE OF THEORY IN THE STUDY**

The study was guided by Lev Vygotsky's social constructivism theory, which focuses on the importance of culture and context in comprehending what happens in society, and building knowledge based on this understanding (Derry, 1999; McMahan, 1997; Kim, 2001). This means that learning must be a collective thing as social constructivism implies that learning is an interaction between teachers, learners and other stakeholders or the community. The progressions in Vygotsky's theory are learner-centred and discovery-oriented (Liu, 2005; Mukondeleli, 2018). By giving learners homework, Geography teachers will be involving parents and guardians in the teaching and learning process. It will give parents time to go through their children's schoolwork while noting down their challenges. Parents who are really

concerned about these challenges might help in coming with better solutions. For example, by ensuring that their children get Geography extra lessons within their communities. This will help reduce poor performance in Geography map work.

The social constructivism approach is predicated on the idea that the learner develops new knowledge on the foundation of previously acquired knowledge (Mukondeleli, 2018). Thus, social constructivism believes that learners learn well when they are able to link current knowledge with their prior knowledge, which is perfect for this study since Grade 12 learners will need to be fully equipped with map work knowledge from their previous grades. From senior phase, which includes grade 7, 8 and 9, learners must be taught the basics of Geography map work. This will serve as their foundation so that when they are progressed to the FET phase which is from grade 10, 11 and 12, they are well equipped with knowledge of map work. The theory holds the view that learners build their own ideas than get them from educators (Mukondeleli, 2018).

Students engage in social learning activities that leverage realistic project-based approaches and cognitive resources suited to the topic (Greydler, 1997; Pratwat, 1994; Kim, 2001). By collaborating with others, students establish a setting where peers can share meanings (Brau, 2020). Social constructivism encourages collaborative learning. Working together as a group is important in map work as learners will participate and enhance skills of teamwork while at the same time it will make them feel involved rather than listen to the teacher and do everything the teacher instructs them to do. The educator can achieve this by arranging Grade 12 learners in small groups during Geography map work lessons. In terms of this method, learners with difficulties in some sections of work will learn from their group members, and teachers and learners collaborate in learning. This can be effective in reducing the high failure rate in Geography Grade 12 map work.

The researcher will apply this theory in this study by including teachers, learners and HODs as they are all involved in the teaching and learning of Geography map work. The theory will guide this study to identify challenges. The theory relates so much to the study because it encourages collaborative learning and working together, while the study will focus on challenges experienced by teachers, learners and HODs

when teaching and learning Geography map work. The theory will also help with better solutions to the challenges.

## **2.3 LITERATURE REVIEW ON EXPERIENCES OF TEACHING GEOGRAPHY MAP WORK**

This section discusses teachers, learners, and HODs' experiences in the teaching of Geography map work at local, African and global levels since the challenge is experienced in both developed and developing countries.

### **2.3.1 INTERNATIONAL LITERATURE ON THE TEACHING OF GEOGRAPHY MAP WORK**

#### **2.3.1.1 Teaching and learning resources when teaching Geography.**

When teaching a subject, teaching resources are necessary so that the educator can deliver the content effectively. Each and every subject has teaching aids that assist the teacher and learners in the process of teaching and learning. Just like any other subject, there are teaching and learning materials required when delivering a Geography instruction. According to Demirci (2008), lack of resources and tools is one of the difficulties in effectively incorporating GIS into Turkey's Geography curriculum. One of the most frequently used technologies in Geography map production is the usage of maps and atlases. According to Incekara (2012), lack of map work and atlases will hinder the process of teaching Geography map work because one cannot teach map work without teaching materials.

According to a study by Yap (2008), one of the obstacles in the incorporation of the GIS into K–12 Geography map work curriculum was the absence of GIS software and GIS-based resource packages. Lack of suitable software would serve as a challenge to both teachers and learners as GIS is complex. One needs to be fully prepared with proper resources in order to grasp it. Hence, a school must make sure that there are enough maps and atlases, and proper GIS technologies in order to deliver proper content.

### **2.3.1.2 Student teachers' experiences of prior learning of Geography**

Experience and prior knowledge are advantages in the teaching and learning process because they make it simple for students to comprehend new information by connecting it to what they already know or have been taught. Reflections on former experience has been identified as a crucial element of teacher education programmes due to the complicated and dynamic relationship between earlier experiences, perceptions, and current practices (Dolan, 2014). In her study in Stranmillis University College Northern Ireland, Dolan (2014) asserted that the degree and kind of subject knowledge needed to teach Geography effectively, as well as the consequences for beginning teachers' preparation, have been questioned similar to other courses. She went on to emphasise the nuanced interaction between educational expertise and subject-matter knowledge. Martin (2004:187-201) and Dolan (2014) found through their study of student teachers that a background in Geography was not necessarily advantageous when it comes to teaching. This study shows that, in the setting of basic geography, all student teachers, regardless of their discipline backgrounds, are rookie instructors. Educators in secondary schools must make sure that they cover the content well to avoid sending learners who lack proper knowledge of the subject to institutions of higher education as we will keep producing poor Geography educators.

### **2.3.1.3 Teachers' attitudes towards Geographic Information Systems**

It is crucial for educators to always have a good attitude about the subject they are teaching since teachers' attitudes can have a positive or negative impact on the subjects or instruction they are providing. This will be an advantage as we move with times in the era of the industrial revolution. For example, in the past, we used chalkboards, chalks and textbooks to deliver lessons, whereas these days we are technologically advanced with whiteboards, overhead projectors etc. Now in the subject such as Geography there is Geographic Information Systems (GIS). With the use of technology, teachers' conventional function in the classroom was transformed into one of facilitators (Paraskeva, 2008). Information and communication technology (ICT) has changed the role of teachers in classrooms and given them access to a

range of programmes and websites that can be utilised for educational purposes (Ruthven, 2005; Seal, 2001; Demirci, 2009).

Demirci (2009) claims that many other nations have begun incorporating GIS into their secondary school Geography lectures. Turkey is one of the most recent nations to make this daring move, which resulted in the implementation of a new Geography curriculum in secondary schools in 2005. His study into how educators use new technologies came to the following conclusions: less than half of the instructors (66%) had a clear concept of what GIS is, and more than eight in ten (82%) did not know how it could be utilised in Geography lectures. This is according to a study on attitudes of teachers regarding Geographic Information System. Despite the fact that the majority of instructors (76%) thought GIS was a useful teaching tool for Geography lectures, only seven of the teachers said they used GIS software in their classes. Teachers were also found to use GIS at very low rates. Only one in seven teachers (16%) reported using GIS software at a basic level before. With a positive attitude towards Geography map work, GIS educators will master the content, and learners will produce good quality results. Gonzalez, (2014) argued that the objectives of the geography curriculum should promote the use of GIS by students and teachers throughout every stage of high school geography, with an emphasis on higher-order spatial thinking abilities.

#### **2.3.1.4 How Geography textbooks deal with map skills**

A textbook is an example of a teaching aid that both teachers and learners can use as reference in every subject. Usually, textbooks are equipped with content that teachers must teach during an instruction. Normally a textbook will come with a teacher's guide to assist the educator. In Geography there are both textbooks and atlases that must be available during map work lessons. These textbooks and atlases must be equipped with proper information about map skills so as not to confuse teachers and the learners. A study by Artvinli (2020) showed a comparison of Turkey and England in terms of how the geography textbook approaches map abilities. They analysed textbooks used in Turkey and the United Kingdom based

on usage frequency and how maps helped pupils strengthen their map-reading abilities.

Artvinli's (2020) study demonstrated that in contrast to the previous curriculum, the geography curriculum in Turkey takes a skills-education-based approach and is process-based rather than outcomes-based. They also demonstrated how Turkish Geographic education ignores the importance of map abilities. Sonmez and Aksoy (2013) study on Map skills in primary education programs from public to today revealed that; the content of maps should be enriched. Artvinli's (2020) study found that maps created to support map skills in Turkish geography textbooks could not go beyond theoretical knowledge, and the absence of fieldwork further demonstrates the lack of attention to finding a solution and the continued use of old methods of teaching and learning. Instead of putting names of places on the map, Geography textbooks in the UK use high-quality photographs that are accompanied by texts, which encourage students to compare and make their own images. According to the study, UK Geography textbooks contain relevant maps and problem sections that allow pupils to exercise higher order thinking skills in a real-world setting. Aksoy (2019) assert that map skills are the important components of map literacy. As a result, the study revealed that UK Geography textbooks are theoretical, useful, and current. Geography textbooks and atlases should contain maps of high quality with clear instructions so that teachers and learners can identify features and interpret maps without struggling.

### **2.3.1.5 Changes to the secondary school Geography curriculum**

When it comes to updating the educational system, changing the curriculum is one of the good things to do. However, changing the curriculum can have both positive and negative effects, so it needs to be revised frequently. The changes to the Turkish curriculum in 2005, according to Ozturk (2013), forced geography teachers to adopt entirely new methods from those they had become accustomed to over the course of their careers. According to a study, teachers have a hard time adapting to drastic changes that are imposed on them (Fullan, 1993; Guskey, 2002). According to a 2013 study by Ozturk, teachers in Turkey are still having difficulty adhering to the curriculum's requirements, particularly those related to teaching and learning

processes and assessment. This is despite the fact that the new geography curriculum has been in place for seven years. The study also revealed that few teachers appeared to understand the fundamental principles of constructivist geography education, while the majority continued to operate with a modern mindset that sought to fit students into a predetermined and defined world of ideas and practices. Teachers were generally more focused on what they covered in the curriculum than on geographic and transferable skills, which are important components of the Turkish curriculum. Teachers of Geography are required to keep up with any changes in curricula so that they will not have adverse views on curriculum adjustments, as these affect their ability to perform geography map work.

### **2.3.2 AFRICAN LITERATURE ON THE TEACHING OF GEOGRAPHY MAP WORK**

#### **2.3.2.1 Teachers' experiences of teaching Geography map work**

When teaching instruction, there will always be some challenges that teachers and learners will experience in the subject matter. Teachers are expected to come up with better ways on how to address them. According to Naxweka (2018), there has not been much research on map work teaching and learning in Namibian schools. However, Bock's (2003) study on the difficulties faced by student teachers when reading and interpreting spatial data about landforms on 1:50 000 topographic maps revealed that in addition difficulties with basic mathematical calculations, student teachers also had difficulties reading and interpreting maps. Despite the word "contour interval" being used frequently in Geography, either they do not understand how to compute the vertical interval, or they are not familiar with the notion (Naxweka, 2018). This indicates that the students were not taught enough content by their secondary map work teachers. This is why they struggle to read and interpret maps at university. From the base of prior knowledge, learners construct new knowledge (Mukondeleli, 2018).

This shows that there are still teachers in Namibia that are teaching Geography with little knowledge of map work. It further indicates that teachers in Namibian schools

who are teaching Geography are still struggling with mathematics, which is bad because some of the sections in map work need calculations.

A study by Naxweka (2018) further demonstrates that the topics that teachers find challenging are also the ones that students find challenging when working on maps. She said that 50% of the themes were challenging to students. The subjects covered include latitude and longitude, inter-visibility, and gradient (Amosun, 2016). She emphasised the variety of difficulties encountered by teachers while introducing map work. The difficulties include students' lack of proficiency in fundamental mathematics; their lack of drive to attend classes, do their homework, and perform well in exams; and their negative attitudes towards map work, which they view as tedious, difficult, and demanding abstract thought (Amosun, 2016). This shows that learners who find Geography map work challenging are more likely to develop hatred towards the subject and may not put more effort in trying to improve their performance.

The Namibian secondary school geography curriculum, according to Naxweka's (2018) study, is in line with the learning and assessment objectives stated in the Namibian national curriculum for basic education, further demonstrating that both the national curriculum and the geography curriculum are very clear on what kind of teaching and assessment is to be carried out; however, neither of these policy documents offers instructions on how teachers should conduct their lessons. This means that the teachers are not assessing pupils on equal terms because there is no reference in the national policy papers to how they should be evaluated with a view to promoting learning. It is apparent that teachers do not consider the learners in a proper way as Namibia policy documents do not provide any information on how they should be assessed to promote learning.

The curriculum policy documents shall provide guidance to teachers on how to teach and assess a particular lesson and shall provide all the necessary information to enable teachers to teach and learn that subject.

### **2.3.2.2 Teachers' attitudes when teaching Geography map work.**



For an educator to produce good quality results in a subject they are teaching, they must have a positive attitude towards that instruction. A map work educator must be someone who is passionate about Geography and willing to go an extra mile in assisting learners to achieve good quality results in the subject. According to Okwilagwe (2012), Geography teachers' attitudes of teaching Geography map work is one of the challenges that add to high the failure rate in Geography map work in Nigeria. This shows that there are still Geography map work teachers in Nigeria that have negative attitudes towards map work. There are various reasons why teachers have a negative attitude towards an instruction. Sometimes it is pride or laziness of asking or seeking clarity where one does not understand the content. Van Heerden (2008:19) states that, in their verbal interaction with learners, teachers who do not have a favourable attitude or views are also likely to communicate them negatively. Teachers who have a negative attitude are also not passionate about teaching students on Saturdays and the holiday periods, (Mukondeleli, 2018).

According to Kojeweke, (2013) a teacher's attitude in the classroom affects quality teaching and education as well as negative attitudes make it difficult for students to receive messages on topics, they learn which lead to incorrect interpretation of concepts. In the classroom, learners will also be beginning to perceive map work as dull and begin to have an unfavourable view of geography. Some students see geography as an uninteresting subject, which can make it hard for them to get involved in the material and may lead to insufficient pupil motivation and interest levels that are likely to influence their learning outcomes (National Research Council 2006 ; Mundendefe & Namafe, 2019).

In Ozdemir's (2012) definition, attitudes are propensities that cannot be seen for themselves but are thought to produce observable behavioural tendencies. Teachers may feel more confident in their abilities to instruct Geography map work material, which will encourage students to work hard and pass the course at the conclusion of the school year. In the study "High School learners' Attitudes toward Geography Courses," Ozdemir (2012:340) found that 89,5% of the students stressed the importance of the geography teacher's actions in the classroom and their performance in order to have a successful geography lesson and map work in particular. Incekara (2010, 552) observed that among the obstacles were instructors'

attitudes and perceptions about GIS as well as unfavourable views from educational authorities. He further disclosed that many teachers see geography as just memorizing geographic locations, names, and regional information, negating the requirement for spatial analysis using GIS (Incekara, 2010:552).

Ozdemir (2012) claims that attitudes are tendencies that are not directly visible but seek to elicit specific observable behavioural tendencies. Geographic maps can help teachers feel more confident in their ability to teach their material, which will favourably influence students and inspire them to study hard and complete the course at the conclusion of the school year (Mukondeleli, 2018). Ozdemir (2012:340), in a study titled High School Attitudes to Geography Courses, found that 89.5% of the learners stressed that geography teacher behaviour and outcomes in class were important for good geography teaching, especially map work. Incekara (2010, 552) notes in his research that teachers' attitudes and perceptions, as well as educational authorities' negative perceptions of GIS, are some of the barriers identified. In addition, he noted that many teachers view geography as just recalling places, names, and local information, negating the need for spatial analysis using GIS (Incekara, 2010:552).

Most teachers, according to Amosun (2016:45) and Filgona et al., (2016:2), look uncommitted to perfection because of their poor approach toward teaching map work. Amosun (2016:45) further argues that when salaries are late or unpaid, teachers protest and avoid their lawful tasks, and they appear to care less about extraordinary performance in their students' final test scores. To produce high-quality results in map work, teachers must be committed to both their job and their students.

### **2.3.2.3 Geography map work teaching in Ethiopia**

In Ethiopian schools, students' performance and practice with reading maps is affected by a variety of curriculum- and school-related problems, including insufficient time allocated for teaching Geography and a lack of teaching resources (Siddu, 2012). The study found that the two weekly classes offered in Ethiopian secondary schools have an impact on both the teaching and learning of Geography as well as students' map-reading skills. This is bad as teachers will not cover the content in time, which will result in poor performance in Geography.

The study further showed that teaching materials also affects students' performance in Ethiopian schools. Siddu's (2012) study showed that maps of Ethiopia, Africa and the world were the most readily available teaching tools. The maps were stored at the school, according to the other findings, indicating that they would not be used if the storekeeper was not around. Also, there is no map work lab or a place that is appropriate for teaching and studying map reading techniques. It is the responsibility of the school to ensure that teaching and learning materials are always available for teachers and learners. Any situation that denies them access to the resources will result in poor performance in any subject, Geography included. Mzinga and Onyango (2021) argued that using appropriate educational tools is important in geography education. Butt (2011) argued that teaching aids and learning aids help give educators ideas for teaching. Eldelson, Shavelso, and Werthein (2013) argued that the use of educational tools strengthens geographers' thinking skills and improves their problem-solving skills. The use of geography materials helps educators develop appropriate teaching methods for cartographic lessons. As cited by MZinga and OnyaNgo (2021), Makewa, Role, and Ngussa (2012) found that Tanzanian secondary school English teachers still face challenges in teaching tenses, spelling, pronunciation, summarization, article use, irregular verbs, punctuation, word order, and conditional sentences. Their work also showed that the problem stems from a lack of educational resources (Makewa, Role & Ngussa, 2012). To master the cardwork portion of the teaching and learning process, educators must be fully equipped with all the teaching tools necessary to convey the content of the cards. Heffron and Downs (2012) emphasized that geography is a subject that reflects learners' everyday lives (Mzinga & OnyaNgo, 2021).

According to Mzinga and OnyaNo (2021), newspapers and magazines contain a variety of maps that people use to make sense of the information presented. Teachers and learners should take advantage of available educational resources to improve their performance in cartographic work. As Tety (2016) argues, educational resources are key to improving teacher and learner performance. In addition, learners found geography learning more interesting when using ICT devices, as opposed to traditional blackboard instruction, and consequently improved their performance in this subject (Chirwa & Mubita, 2021).

According to recent research, there are good teaching methods that teachers can use to teach geography. Mundende and Namafe (2019) recommended ensuring equity in geography teaching and learning, leaving no learner behind. This means that geography teachers need to be aware of and support those who need special attention when working with geographic maps. The use of technology in geography education has become increasingly popular in recent years (Mubita, Mundende, Milupi & Kalimaposo, 2023). Aylett and Hanlon (2010) conducted a study on the effectiveness of digital technology in geography education and found that students who used digital technology performed better than those who did not. Educators working with geographic maps should be familiar with and use digital technology to teach geography in order to make geographic maps interesting to learners and thereby improve cartographic performance. Fieldwork is an important part of geography education because it gives students first-hand experience with physical and human geography (Mubita, Mundende, Milupi & Kalimaposo, 2023). This is supported by his Mundende (2015) study discussing the value of field research in geographic education. Fieldwork is an appropriate teaching strategy, especially in mapwork, as it allows learners to see the phenomena they are studying in the classroom with their own eyes and recall them during the lesson.

Siddu's (2012) study also highlighted lack of interest by teachers to teach map reading skills as the results showed that 47.15% of teachers showed no interest in teaching Geography map skills in Ethiopian schools. It further showed that some of the schools' low performance was caused by learners' lack of interest to do homework, assignments, and other related school activities. A study by Mbugua (2012) found that lack of motivation and poor attitudes of both teachers and students contributed to poor mathematics performance in Kenyan schools. Negative attitude and lack of interest towards a subject will always result in poor performance because both teachers and learners will not put more effort to improve their performance in that particular subject, Geography included. A study by Mwesiga (2017) also found that geography students in Tanzania had poor math and drafting skills, poor English skills, and low teacher and student motivation.

#### **2.3.2.4 Geography map work teaching in Kenya**

According to a study by Maonga (2015) in Kenya, very little research has been done on students' attitudes towards Geography and, in particular, map work. He added that no research has been done to show a connection between teachers' qualifications and student achievement in Geography in Kenya. This shows that although the department might be aware of the challenges of Geography map work, nothing is being done to address the issue, which is why they continue to experience poor performance in Geography.

Maonga's study further shows that students have maintained their minimal performance around map work, according to the Kenya National Examination Council Report (2015). However, the study demonstrates that teachers have continued to instruct Geography using conventional techniques that place a greater emphasis on the teacher than the learner, such as lectures, demonstrations, and case studies. This negatively affects learners because the teaching approach is mainly based on the teacher doing more of the talking and requires less learner interaction. A study by Mwesiga (2017) on factors influencing poor student performance in Tanzania found that educators did not participate in content training workshops to update content knowledge. Mtitu (2014) pointed out that teacher expertise and instructional practices are important as they influence learner performance.

Gikunda (2016) study of factors affecting teacher performance in implementing geography curricula in public secondary schools in Kenya found that a lack of instructional resources in some schools affected how teachers taught geography. Abandoners also indicated that teachers were impacted by workload due to the large number of students per class. This poses a serious problem as it is not easy to mark and sign a learner's textbook due to the amount of work and time involved. According to Mubita, Mundende, Milupi, and Kalimaposo (2023), Zambian teachers are frustrated by the limited class time for geography class assignments, as it is difficult to cover all the important content and skills so that students can fully engage with the material.

A study by Kojweke (2013) showed that most Kenyan schools lacked resources such as cartographic tools and laboratories to support learning, which affected students' geography performance. A study by (Abubakar, Bello, Hussain & Bello, 2021) found that visual aids and materials are underutilized in secondary school geography lessons in Nigeria. This indicates that working with geographic maps requires teaching and learning resources that help learners understand what is being taught in the classroom. Many schools in Zambia may not have resources such as maps, trails and other spaces and funds to provide these materials, which may limit the effectiveness of geography education (National Geography Education Council, 2018; Mubita et al., 2022).

### **2.3.3 SOUTH AFRICAN LITERATURE ON THE TEACHING OF GEOGRAPHY MAP WORK**

#### **2.3.3.1 Language as a challenge to Geography map work teaching**

According to Maduane (2016), the fact that English is the primary language of instruction in the classroom directly affects how Geography is taught and learned. Language is a vehicle through which Geography is taught in every classroom, according to Butt (2002), hence it should be a key factor in lesson planning and preparation. This shows that indeed the language barrier is a great concern as learners cannot understand some difficult terminology.

Geographical jargon predominates in the classroom (Butt, 2002). This becomes a challenge as some learners do not understand English. So, it becomes difficult to understand some concepts when learning map work.

Geography teachers should go an extra mile in understanding the subject (Maduane, 2016). They must keep themselves updated with current developments in the teaching of the subject. They must also seek help where they do not understand the content they are teaching. They can further their studies and attend English classes more often as the two subjects are linked.

Maduane (2016) asserts that Geography instructors who struggle with concepts choose to teach the subject in their mother tongue (MT), which promotes learning and makes it easier for students to comprehend. This will result in poor results because learners have a difficulty in translating questions in their home language during tests and exams, since they will be writing them in English whereas in class, they were taught in their home language. According to Pluddeman (2002), Veloso (2002), Mkhize (2010), Ramoupi (2011) and Maduane (2016), the practice of code switching in the classroom has an impact on how students develop and succeed.

According to Mukondeleli (2018), South Africa's Language barrier in the classroom has existed since the apartheid era, when the June 16, 1976, riots abolished Afrikaans as the language of instruction in schools, ushering in a new regime of English as the language of instruction in black South African education. Howie, Venter and Van Staden (2008:551) argues that the language of instruction in most schools is changing from African languages to English, meaning that over 80% of South Africans are studying in a language other than their mother tongue. This is a challenge as some learners do not understand English and it affects their academic performance. Mukondeleli (2018) claims that one of the factors encountered by students when studying map work in Geography is the use of language. Thus, because English is being used in South Africa for both teaching and learning, it becomes a challenge because some learners do not understand the language. Hlaithwa (2013) and Mukondeleli (2018) argue that according to the mother tongue educational policy, students should begin learning at school in their native tongue until the third grade.

Considering that English is the language used to respond to exam questions, the majority of Grade 12 students may find it difficult to speak with others in that language, which may be one of the things that disadvantages them (Rammala, 2009; Mukondeleli, 2018). In South African schools, examination papers are set in English. But most learners do not understand English, which is why their performance in Geography map work will constantly be poor.

In every classroom, Butt (2002: 200) contends that "language is the medium for teaching geography and, as such, should play a significant role in the planning and preparation of lessons." Govender (2010:4) and Hazelhurst (2010:6) Claims that the

language of learning and instruction (English) is an important core of geography teaching and learning in the classroom. This means that English is a challenge when teaching map work as some learners do not understand it. Butt (200:200) asserts that the delivery of teaching and learning activities depends critically on the effectiveness and fluency of instructors in the Language of Learning and Instruction (LoLT) and subject-specific curriculum. He continues by saying that the teacher should control how the language and English are used within the context of the learning process. The learning of students is significantly influenced by English (Butt, 2002:201).

According to Maduane (2016), complex geographic terminology is a barrier to learning. It makes it exceedingly challenging for students to comprehend concepts that are unique to a given field. Butt (2002:200-211) argue that geographic terms are predominantly used. This means that geography teachers need to normalize learners' geographic concepts more often so that they don't struggle.

A study by Mkhize (2010) found that the relevant factors underlying learner underperformance in geography curriculum subjects were:

- Language problems faced by learners
- thinking style.
- Content-related textbook culture-specific issues
- English as a subject and English as a compulsory subject in the curriculum have different requirements
- Learning experience at school

This means that in South Africa English is used as the language of instruction, which makes it difficult for learners to understand during geographic map lessons.

### **2.3.3.2 Teaching and learning resources when teaching Geography map work.**

During an instruction, the teacher and learners must have all the necessary teaching aids that will assist them during a lesson. During Geography map work lessons, teaching aids such as maps, atlases and globes are necessary to assist teachers and learners. In learning, materials serve as tools to enhance teaching and learning



because they help learners understand what is being taught and are very useful for teaching and learning subjects such as geography (Abubakar, Bello, Hussain & Bello 2021). Geography is a difficult subject to teach in the curriculum because of the way it is taught (Abubakar, Bello, Hussain & Bello, 2021). According to Inne (2012), it is impossible to teach map work without maps. The unavailability of maps during map work lessons can pose a challenge.

Mukondeleli (2018) asserts that Learner Teacher Support Materials (LTMS) in map work play a significant role in the process of teaching and learning, and schools should have a wealth of materials to effectively teach map work. Education (2010) reports that the provincial report on the monitoring of schools found that there was a shortfall of stationery in 28 secondary schools in Vhembe District as well as a shortage of textbooks for Grades 8-12 in 19 schools. The Department of Education must make sure that there are enough classrooms and teaching aids in South African schools.

For every Geography lesson to be successful, teaching aids must be available. In terms of map work, the following teaching aids are essential, namely, Topographic map, Orthophoto map, globe and atlases. In South Africa, the process of implementing the curriculum depends heavily on the accessibility and use of LTSM (Mukondeleli, 2018). The researcher has observed that teaching aids like the globe, both Topographic and Orthophoto maps, Google earth and computers, Geographic Positioning System (GPS) devices are still not available in some of the schools in Mankweng Circuit. According to Mukondeleli (2018), the majority of schools have more written than visual resources. Lack of resources hinders the success of a lesson. Ahiaku, Mncube and Sunday (2019) are of the view that a further barrier in the teaching and learning of map work in South African schools is the lack of resources, including maps, textbooks and computers. This results in poor performance in Geography map work as teachers and learners will not have enough materials to refer when they do not understand some of the concepts during an instruction. This is supported by Mlozi (2013), who argues that poor teaching and learning environments due to lack or lack of adequate laboratories, libraries, toilets, classrooms, hotels, staff housing, textbooks, and student meals are responsible for poor grades.

A study by Innes (2012) found that the availability of maps and map-making resources was an issue, as was the level of teacher training. He also found that textbooks contained too few excerpts of cards, that the cards used in exams were not available, and that not enough textbooks were used to learn card expertise. This was supported by Naxweka (2018), who argued that Namibia faces the same map education challenges. She also asks teachers to provide maps of the area and provide training on the use of maps in geography classes. Similarly, a study by Van der Westhuizen and Fleischmann (2018) found that many South African schools lack access to information technology resources and computers. The study reported low levels of technology adoption in teaching and learning among many geography classrooms and second language learners who struggle to understand abstract concepts.

According to Ahiaku, Mncube and Olanirian (2019), the unavailability of resources such as maps, textbooks and computers further hinders the teaching and learning of map work in South African schools. They further argue that the lack of resources affects even the few teachers with the educational expertise to teach geographic knowledge and skills. A study by Innes (2012) found that most schools are under-equipped with the computer hardware and software needed to integrate a geographic information system, or GIS. To teach cardwork. Similarly, in most countries such as the United States and the Netherlands, research has found it difficult to get his GIS program up and running in some secondary schools due to lack of resources (Bednarz & Schee, 2006). Madiwalar (2012) found that the low proficiency of learners in map work in Ethiopia is mainly due to the lack of resources such as textbooks and basic maps. In accordance with Larangeina & van der Merwe (2016) and Wilmot & Irwin (2016), learners can take part in practical and fieldwork activities to hone the necessary skills because materials like maps and drafting equipment are readily available. Materials serve not only as teaching and learning tools, but also as learner motivation (Maldiwalar, 2012). Teaching materials make teaching and learning easy and interesting and, when used correctly, improve performance in Geography work.

A 2019 study by Ahiaku, Mncube and Olarian found that urban schools have better resources than rural schools. It also revealed that some schools in urban areas are

equipped with map work and electronic equipment such as video and computers, including libraries and internet access. (Ahiaku, Mcube & Olarian, 2019) We also found that some rural schools with computers did not use computers, and that geography teachers in some schools had limited computer knowledge and skills. Some educators were unable to tell the difference between software and videotape (Ahiaku, Mcube, & Olarian, 2019). Insufficient teaching and learning aids in some schools or inability to use them by some educators can hinder teaching and learning and reduce learner motivation (Madiwalar, 2012). The majority of schools in rural areas are not equipped with sufficient textbooks, topographic maps, globes, map work equipment, or other technological devices like computers and movies (Amosun, 2016; Wilmot, 2015; Wilmot & Dube, 2015). Additionally, the majority of educators cited poor textbooks as a significant issue. They attributed the lack of textbooks to the inability to retrieve books from previous learners and vandalism (Ahiaku, Mcube, & Olarian, 2019).

### **2.3.3.3 Educators' teaching experience**

Teaching experience can be added as an advantage to an educator, especially when it comes to keeping up with new trends in education. Geography teachers in South Africa and the rest of Africa have considerable teaching experience (Ahiaku, Mncube & Sunday, 2019). It does not necessarily mean that teachers who have considerable teaching experience can master the content well. The researcher observed in her teaching practice days that most South African Geography educators cannot teach or do not know how to teach the map work section. Most of them would prefer student teachers to teach learners this section, and when you ask them, you will find that they have been teaching the subject for years, which clearly shows that a long teaching experience does not necessary mean that one, will yield good results in a particular subject or instruction. Teachers' diverse teaching experience has resulted in unsatisfactory map work teaching and geography achievement (Madiwalar, 2012). A study by Ahiaku, Mcube, and Olarian (2019) found that even the most experienced educator struggled with her GIS teaching because most teachers left training school before GIS was introduced into her geography curriculum. However, it turned out that some new graduate educators had problems teaching maps.

Okwilagwe (2012) states that there is a correlation between student performance and the number of years a teacher has been instructing Geography, and more especially, map work, in Nigerian schools.

In some South African schools, Geography is taught by teachers who have been teaching it for years irrespective of whether they produce good results or not.

According to Kojweke (2013), nine years or more is considered sufficient to give principals experience in teaching methods that influence students' geography performance in Kenya, as well as imaginative knowledge that encourages students to excel in geography and to encourage them to excel. Poor performance in geography learners may not necessarily be related to new teachers (Yahaya, Dutsinma, & Abdulaziz, 2021). Geography is a subject which requires one to be equipped with proper knowledge of the content because it consists of two sections which is the theory part and the map work section. One will need to be fully equipped with mathematics knowledge since there are calculations and measurements in the map work section. This is supported by Naxweka, (2018) research study which revealed that the topics that students find difficult in map work are the same topics that teachers find difficult. She said students found her 50% of the topics difficult. Topics include slope, visibility, latitude, and longitude. She also highlighted the many challenges teachers face in teaching map work. Challenges include learners' lack of basic mathematics skills, lack of motivation to attend classes, homework and exams, and negative attitudes towards tedious, difficult, abstract thinking cartographic work. This indicates that learners who find geographic maps difficult to work with are more likely to dislike the subject matter and may abandon efforts to improve their grades.

Amosun (2016) stated that experiences of educators should not be restricted to teaching in classrooms and certain subjects; rather, they must participate in national marking, where ideas from other examiners in particular themes are shared. This is where they will learn new ideas and approaches as to how to deal with any challenge they might encounter while teaching Geography map work. A study by Chirwa and Mubita (2021) shows that teacher tenure has a small effect on willingness to use ICT resources. It was teachers who had been teaching for less than five years who were actively trying to use ICT resources. This was because the

teachers in this group had just graduated from college, and she was more exposed to ICT resources than older teachers (Chirwa & Mubita, 2021). Researchers found that some of her HODs were not appointed because of her qualifications, but because she had taught at the school for years. This is a big blow for geography. Because it turns out that the school was actually looking for a Geography Dean but ended up hiring the wrong candidate because they wanted to promote a long-time collaborator. This not only affects learner performance, but also educator performance. Because if something goes wrong while teaching geographic maps, I have to contact the dean who doesn't know much about the subject of geography. According to Kojweke (2013), teachers with several years of experience stop and reflect on their day-to-day work, discuss with their peers what is happening in their teaching process, develop new strategies from their experiences, and develop new strategies. You will become more knowledgeable as you develop techniques and focus your attention on the learner and some of the characteristics that hinder or facilitate learning. For teachers to reach their full potential when working with geographic maps, they need well-informed, organized, and enthusiastic dean-like leaders.

According to Koledoye (2011), a teacher's experience is her one of the key factors in personal politics affecting staff. He also believes experience enhances a teacher's effectiveness. Koledoye (2011) also argues that teaching is an act that can be refined through training and practice. And it is very important to secure competent teachers in rebuilding the education system.

#### **2.3.3.4 Educators' knowledge**

A study by Ahiaku, Mncube, and Olarian (2019) found that most educators struggle with different aspects of map work in grade 12. The study also showed that challenging skills faced by most educators included calculus (length and area, slope, vertical exaggeration) and GIS (Larangeria and van der Merwe, 2016; Wilmot & Dube, 2016). The study found that most educators had poor math skills due to the

legacy of apartheid, which stripped the majority of black people of their math skills (Lalangeria & van der Merve, 2016; Wilmot & Irwin, 2016). Even freshly college-trained educators have been found to have problems teaching map work (Ahiaku, Mncube, Olarian, 2019). This negatively impacts card performance as these new teachers lack knowledge of the content.

According to Pluddemann (2002), many subject teachers have little expertise. Moreover, in some cases, he argues, teachers may simply be unqualified to teach a particular subject, even if they ultimately do. Similarly, Bloch (2010) argues that many subject teachers lack subject knowledge competence, thereby disempowering learners. Geography teachers who have difficulty with conceptual comprehension rely on teaching the subject in their mother tongue (MT) to facilitate learning and make it more readily understood by learners (Maduane, 2016). Donald, Lazaraus, Lolwana (2006:199) The point of the latter quote is that the language of the syllabus/content must be learner-friendly and accessible to subject teachers in order to facilitate student learning. This is Rodseth (2002:109) They argue that textbook languages should allow second language learners to easily access knowledge without encountering conceptual barriers. Teachers' inability to complement the language of difficult textbooks stems from their own inability to master the language of learning and teaching (Maduane, 2016).

According to Breidlid (2003:83) Teachers struggling with curriculum are tempted to hide weaknesses in curriculum design behind MT by switching their code to MT. Maduane (2016) argues that her LoLT code-switching practice in MT betrays learners. This is because the learner's native language does not have the academic vocabulary necessary to answer the exam questions. For this reason, learners do not answer questions during tests and exams, which contributes to high error rates in map work.

Previous studies have shown that the same problems that cause difficulties for learners in map work are the same problems that cause difficulties for teachers. A study by Amosun (2016) found that students found 50% of cartographic topics difficult for him. Topics include slope, visibility, latitude, and longitude. His research also found that teachers face challenges in teaching map work. These include learners who lack basic mathematics skills, lack of motivation to attend classes,

homework or exams, and learners who have boredom and negative attitudes towards map work (Amosun, 2016). This means that there are still geography teachers who teach map work with little knowledge of the content. According to a study by Amosun (2016), geography teachers frequently dread and avoid teaching map work since it is difficult and necessitates quantitative and abstract thinking abilities. Goodwin (2014) argued that weak teachers can negatively affect learners.

Bednarz et al. (2006) shown that when teaching map work, instructors frequently concentrated on teaching map content rather than map abilities. This will disadvantage the learners as they might know the content but fail to interpret the content on maps. According to Larangeira and van der Merwe (2016) if students are rote-taught and not encouraged to apply map skills, then their spatial cognition with regards to map literacy is impeded.

The following was discovered by Bock's (2003) study on the difficulties student instructors encountered when reading and comprehending spatial data concerning landforms on 1:50 000 topographic maps: Despite the term "contour interval" being used frequently in school geography, the study found that student teachers had difficulties with basic mathematical calculations, had difficulty reading and interpreting maps, did not know how to calculate the vertical interval, and were unfamiliar with the concept. They were also unable to recognize slopes and other landforms on contour maps. This proves that they are still Geography teachers who lack map work knowledge and mathematics but are teaching map work in grade 12. Teachers should be able to recognize the connection between "spatial visualisation and mathematical reference" in addition to being able to read and comprehend graphic representations (Bock, 2003; Naxweka, 2018). Studies from England and Poland found that difficulties students encounter in reading and interpreting topographic maps may be due to teachers' inability to adequately manage the elements of teaching cartographic skills (Reinfried, 2001). A study by Larangeria and van der Merwe (2010) found that student-teachers who struggled with cartographic skills were not regularly taught maps at the school level, and some secondary school teachers were disadvantaged by not having a geography degree.

### **2.3.3.5 Educators Qualification**

For an educator to excel or produce quality results in the subject, they must be qualified to teach that subject. For example, a teacher that teaches Geography must have specialised in the subject in their qualifications. Educators' qualifications play an important role in producing good quality results for that certain instruction. According to the South African education system, a teacher must hold a four-year teaching degree or acquire a post-graduate teaching degree in order to be considered a qualified teacher. Failure to achieve this means you are an unqualified teacher. Kojweke (2013) argued that in Kenya school principals were qualified teachers and had competent teaching methods that influenced students' geography performance. The researcher has observed that in most South African schools, subjects and instructions are not taught by qualified educators. For instance, you will find that a teacher is teaching another grade but because there is no a qualified Geography teacher available, the school will just delegate the educator to teach the instruction.

Yahaya, Dutsinma, and Abdulaziz (2021) argued that hiring teachers with teaching qualifications higher than the National Certificate in Education (NCE) is likely to improve learner performance. Poor teacher quality, according to Mundende and Namafe (2019), contributes to Zambia's low academic achievement. According to MoE (1996), some learners were taught by graduates who were not qualified to teach higher grades under Zambian education policy. However, a study by Chirwa and Mubita (2021) showed that there were no clear data indicating differences in skills and knowledge of Geo-content topics and her ICT-geography integration regarding a teacher's educational background.

A 2019 study by Ahiaku, Mancube and Orlarian found that KwaZulu-Natal has a large number of unskilled educators. This is supported by previous findings that KwaZulu-Natal has the highest number of unskilled educators in South Africa (Ahiaku, Mncube, Olarian, 2019). Wilmot and Dube (216) claimed that most of the unskilled educators were found in rural areas of the county. These results indicate that the KwaZulu-



Natal Ministry of Education failed to attract qualified educators, especially in geography, and possibly other subjects (Ahiaku, Mncube, Olarian, 2019).

According to Mubita, Mundende, Milupi, and Kalimaposo (2023), on their study of teacher and student perspectives on geography teaching and learning reveals that one of the main challenges facing geography education in Zambia is related to the shortage of qualified teachers. It may be challenging to teach geography successfully since many teachers lack the necessary teacher preparation (Mundende et al., 2022).

According to Mukondeleli (2018), there are 2,642 under qualified teachers who have finished Grade 12 in South Africa, but they have only two years of postsecondary education. This shows why we do not have the desired results with learner performance in school subjects, because the teachers are not qualified to teach the subjects they are teaching. You cannot expect a teacher who did not specialise in Geography to produce good quality results in map work. Maduane (2016) observed that 43, 8% of Geography teachers had a matric certificate. According to Mukondeleli (2018), among the factors that have a direct impact on students' performance and accomplishments in map reading and interpretation skills are the teachers' training and credentials. Adeyemi (2008:203), who noted that there were notable discrepancies in learners' performance in Geography map work on the basis of teachers' credentials and experience, provided support for this. The performance of students is negatively impacted by inexperienced teachers of map work.

According to a study by Adeyemi (2008:203), which Mukondeleli (2018) cited, the majority of schools in Ondo State, Nigeria only had two geography teachers. Seven schools that were supposed to have 7-8 geography teachers only had six of them, and 12 schools that were supposed to have more than eight geography teachers only had five. The example above demonstrates how poorly educated and inexperienced teachers are used to teach geography map work in these schools, which results in a high failure rate (Mukodeleli, 2018).

Both Adeboye (2015:22) and Filgona et al. (2016:2) assert that underqualified teachers are to blame for students' subpar map task performance. The lack of trained and experienced geography teachers in Ganye Educational Zone has been cited as one of the causes of students' inadequate performance in SSSCE

Geography map reading. This suggests that instructors recruited to teach map work are not competent to do so, which has an impact on students' performance. Geography map work is going to be difficult for unqualified teachers, making it difficult to teach it (Mukodeleli, 2018).

The mathematical foundations and map-thinking abilities needed to teach map work are in low supply among underqualified and unqualified teachers (Mukodeleli, 2018). Similar claims are made by Amosun (2016:45) and Filgona et al. (2016:2) regarding the inadequate preparation and weak arithmetic skills of teachers of geography map work. Such teachers, according to Amosun (2016:45), avoid teaching geography map work since it requires mathematical aptitude and abstract reasoning. This is seen in the performance of students, who struggle to complete the bulk of the mathematically based problems on their exams.

According to Mukondeleli (2018), untrained teachers of map work frequently lack the skills necessary to mark and evaluate WAEC map reading and interpretation exams. As a result of teachers' inability to properly mark assignments, students' performance on their geography map work would suffer.

A study on the effect of teacher credentials on secondary school student performance was done by (Koledoye ,2011). The goal of this study was to find any potential differences between certified English teachers and other teachers with formal training in terms of their ability to teach English in secondary schools. The results of this study showed that teachers with higher education had more teaching knowledge, competencies, and skills, and had greater influence on the teaching and learning process. This is supported by research by Goldhaber and Brewer (1997). According to the study, math students who were taught by instructors with masters or advanced degrees in mathematics performed better in non-mathematics subjects than other students who were taught by teachers without advanced or masters degrees. Similarly, Nwachukwu (1990), in a study of teacher qualifications and expertise as predictors of student performance in J.S.C., found that in Integrated Science, students who were taught integrated science by skilled teachers outperformed students who were taught by inexperienced teachers.

A study by Ezeuda and Utazi (2014) on the effects of geography teacher discipline and years of teaching experience on competence levels in teaching map work found

that geography teachers with a master's degree were more competent than geography teachers of any other class in teaching map work in secondary schools. Specializations enable teachers to adequately answer detailed and advanced questions in the area of study and show that you have a thorough comprehension of the course material conceptually. Nwachukwu (1990) argued in his research that the expertise of unskilled integrated science teachers influences student achievement. He found that the more biologically biased a subject was, the more likely it was that an integrated science student would perform better. A teacher's knowledge of a subject affects teaching attitudes and ultimately student performance. According to Koledoye (2011), the quality of a geography mapwork teacher in terms of their professional background and area of expertise can greatly influence how well-versed they are in their subject matter and how creative and innovative they are able to be. According to Ezeuda and Utazi's (2014) study, geography teachers' areas of expertise have a substantial impact on their abilities to teach mapwork in secondary schools in Zambia.

Additionally, the researcher has noted that, when it comes to hiring educators at schools, you will find that the school is actually looking for a Mathematics teacher. They will advertise the post indicating Mathematics as the required subject. But during interview, the school might ask the shortlisted teacher if they can teach certain subjects even if they did not specialise in it, but because the person will be desperately indeed of employment, they will take the offer. This will mean that the teacher is going to teach the subjects they are not qualified to teach and have no knowledge of the subject content. This always contributes to poor performance in the subject, Geography included.

Although some educators might be qualified to teach Geography, some do not understand or master certain sections in the subject. According to Chirwa and Mubita (2021), one of the reasons some geography teachers avoided using ICTs in their lessons was a shortage of employees skilled in fixing and maintaining ICT devices or offering support in their use. The research also showed that certain educators were incredibly unprepared to use ICTs into their Geography classes. In such cases, they resort to skip and not teach those sections at all. This is reinforced by research on the elements that affect pupils' performance in rural and urban

secondary schools in Zanzibar by Mosha (2014), as cited by Mwesiga (2017). Her research revealed a lack of English teachers, a lack of assorted materials for instruction and learning, unprepared educators in schools who were incapable of teaching some challenging topics on the curriculum, irregular use of the English language at home and at school, a high student to teacher ratio, poor teacher accountability, a poor learning environment in the classroom, poverty, and a dearth of home support systems. This contributes to poor performance in the subject, because even though the learners were not taught those sections, they will be forced to answer questions based on the sections the educator has skipped because the National Senior Certificate (NSC) examination question papers are set nationally. The examiners assume that all learners were taught all sections in the syllabus because they are clearly outlined in the Annual Teaching Plan (ATP) for all four terms of the year. The learner will find some questions challenging since the content was not covered in class. Nkosi (2017) claimed that teachers' alleged lack of topic knowledge or their failure to address specific curricular requirements aggravates the issue. This is further supported by Malasusa's (2000) study on the factors impacting subpar performance on the Geography secondary education certificate in Tanzania, namely in the Dar es Salaam and Mbeya regions. According to the study, the declining performance of geography students in the Certificate Secondary Education Examinations throughout time was brought on by teachers' lack of competencies and skills in the subject.

The researcher has noticed that some department heads in the geography department tend to have a bad attitude toward geography because they know little to nothing about the subject. As a result, they tend to ignore problems that teachers bring up, which is why some teachers tend to skip sections of geography they do not understand. 43, 75% of instructors strongly believe that there is a neglect of Geography Map work at some point when they teach, according to Maduane's (2016) study, which found this to be the case. The researcher has also seen that unqualified Departmental Heads tend not to ask subject experts or consultants in geography for clarification; in fact, most of them do not even continue their education. In some cases, they might anticipate information-seeking on the part of geography educators. This is corroborated by research by Kojweke (2013), which found that only one head teacher in Kenya's secondary schools had a master's in the arts while the majority of

geography teachers held bachelor's degrees in education. This suggests that Geography department directors should continue their education and stay current with the field's trends in order to help teachers and students improve their map-making abilities. It is advised that educators in particular subjects, such as geography, engage in research projects so they may recognize the difficulties they have in the subjects they teach and determine the most effective ways to handle them. Geography instructors in Zambia do not receive research training at the diploma level; research is only taught at higher levels of training, and not all schools provide research training at the degree level, claim (Lako & Mubita ,2021).

#### **2.3.3.6 Teaching methods when teaching Geography map work.**

A wise man once said that there are many ways to kill a cat. In the classroom, there are different approaches to teaching and learning that an educator can adapt to transfer knowledge and content to learners just like any other subject. Geography educators must use various teaching approaches to ensure that learners grasp what they teach them in map work. According to Mukondeleli (2018), poor teaching strategies make it challenging for students to learn. These were the methods applied in South Africa during the Bantu Education period. This is true because South African educators still use the traditional narrative method when facilitating learners in the classroom. The narrative method is teacher-centred as educators do all the talking during lessons and limit learners' participation. According to Ozdemir (2012:344), teachers of geography who utilize maps in their lessons still rely on teacher-centred techniques. One of the difficulties facing geography teachers while teaching map work is this (Mukondeleli, 2018). According to Kus, Filiz, and Altun (2014:318), lessons on geography map work have primarily used traditional teaching techniques. The typical teacher-centered approach to instruction, according to Mukondeleli (2018), reduces students' active participation and has a detrimental effect on students' understanding of map work in Geography. The majority of teachers in South Africa continue to employ telling methods and other techniques that are very teacher centric. The learner's participation is severely restricted by the teacher-centered approach, turning them into passive recipients of information rather

than active participants in the classroom environment (Monteith & Nieuwoudt, 2008:29).

A narrative teaching method is not effective while teaching Geography map work because this method will not make it easy for learners to participate. They will not be able to ask questions where they do not understand. In map work, learners have to work together in groups and assist each other to interpret maps. The worst thing about the narrative method is that the teacher will spend time either reading directly from the textbook or writing notes on a board, which will not be effective for map work lessons as more time will be wasted. Sometimes the teacher will not be able to identify learners who need more attention because they did not understand the lesson. Teachers will most likely figure it out after tests and examinations. According to Jacobs (2011), the narrative approach of teaching involves the instructor giving a class an oral presentation on a particular subject. The researcher has observed that the narrative teaching method is still used by most educators during instructions. The approach contributes to poor performance in map work. According to Ng'eno (2015), cited by Mwesiga (2017), the improper use of a variety of instructional tools provides a problem to the teaching and learning of geography. He clarified that educational resources must be closely related to the geography lesson in order to be used effectively in the classroom. In addition, a study by Rupia (2007) on the poor performance of students in geography exams in Tanzania: an investigation into a potential role of teacher methods in selected advanced level secondary schools found that geography teachers had to deal with a number of problems in the teaching and learning process, with a lack of application of teaching methods and a weakness in lesson planning being two of them. According to Abubakar, Bello, Hussain, and Bello (2021), who referenced Sofowora and Egbedokun (2010), geography instruction in Nigeria is mainly centered on the story teaching technique, which makes it dull for students. Because of this, instructors must employ several teaching strategies when instructing the Map Work part.

Teachers tend to employ the teacher-centered method in the learning process rather than including the learners by adopting the learner-centered approach, claim Yahaya, Dutsinma, and Abdulaziz (2021). Making the best instructional decisions that will

impact both teaching and learning can be challenging for educators (Moss, 2017). This is true because, depending on the size of the class and the types of students you teach, mapping requires a range of teaching techniques to master the topic. According to Adunola (2011), in order to deliver high-caliber results, teachers must get familiar with a diversity of instructional techniques.

Sheri (2008) asserts that when a teacher uses a variety of teaching techniques during classes, pupils learn more effectively. This is advantageous because it will enable teachers to identify the most effective approaches that help students comprehend concepts. This is corroborated by a 2010 study by Asikhia, which found that while teaching methods have an impact on students' bad performance, school environment and educator qualifications do not. This is backed by Mwesiga (2017), who suggested that using the wrong teaching strategies can result in students performing poorly in geography classes. Students in Kenyan schools said that the lecture style was the most popular teaching method, which affected how well Geography was taught, according to Kojweke (2013).

#### **2.3.3.6.1 Common teaching method when teaching and learning Geography map work.**

##### **1. Lecture method**

One of the most traditional teaching methods, according to Mukwa and Otieno (1988), the lecture approach involves the instructor using verbal communication to pique the students' attention, influence and stimulate them, and engage them in the learning process. Malusu and Wachira (2008) claim that during lectures, students' activities consist of listening and taking notes. This won't work in courses including map work since students have diverse learning demands, and this approach might not be able to meet them all. According to Gitau (2008) and Omoro (2014), the lecture technique is teacher-centered and is typically employed by geography teachers when imparting factual knowledge or instructing a sizable class. The lecture technique, according to Thungu (2008), restricts student engagement in the course and does not help them build their capacity for reasoning. Although Mukwa (1988) and Omoro (2014) assert that lecture methods will be effective if the teacher takes into account the following aspects: when the teacher uses the lecture method in

conjunction with audio materials to enhance instruction; when the teacher uses language that students can follow and understand; when the teacher is knowledgeable, amiable, and engaging; when the teacher plans and organizes the lecture's main points in a systematic and logical sequence; and when the teacher uses the lecture method in conjunction with other teaching methods like group work and discussion.

## **2. Discussion method**

According to Gitau (2008), the discussion technique involves students actively participating and providing feedback, making it a successful teaching strategy. The use of the discussion technique is appropriate for achieving the goals of geography instruction since it offers a productive way to build skills and utilise knowledge (Omor, 2014). This is supported by Awiti (2010), who claimed that the discussion method can be successful and effective when the following preparations are made by the teachers and the students: the students are given enough time to conduct research on the topic; the teacher makes documents available or assists the students by providing sources of information; and the students are arranged in the appropriate groups and select group leaders to write down the points raised during discuss. This is in line with Ngaroga's (2008) assertion that the instructor should serve as a facilitator during discussions.

## **3. Demonstration method**

According to research by Mukwa and Otieno (1988), demonstrations should frequently be followed by practice to maximize learning by observation. According to Thungu (2008), learning by doing comes after observing, therefore drill and practice sessions are required to get pupils ready to finally finish the work on their own, either as a group or an individual. Demonstrations are one of the recommended teaching strategies, according to the Kenyan secondary school Geography curriculum (Omor, 2014). According to Waka and Ngigi (2009), students should be taught using approaches that would increase their confidence so they may perform well in exam rooms.



#### **4. Field work**

In secondary schools, field trips are a very effective teaching strategy (Ngau & Nyamweru, 1986). Involving students in the learning process through field work as a teaching strategy, according to Ngaroga (2008), provides the learner with a solid and concrete basis for conceptualization, first-hand information, increases the meaning of learning, fosters long-lasting memories in the learner, and gives the learner the chance to improve social relationships among students as well as between students and the teacher. As a result, the inclusion of field work in secondary school geography lessons contributes to the achievement of one of the course's objectives, which is that "by the end of the course, the learner should be able to apply field work techniques in studying Geography" (KIE, 2002; Omoro, 2014).

#### **5. Questioning method**

This is the teaching strategy that is most frequently employed, according to research (Mullen, 2003; Kyalo et al., 2006; Sewe, 2006; Omoro, 2014). This is supported by the MKRDEC secretary, who pointed out that the explanation-needed questions were poorly explained because the majority of pupils merely recounted the facts and were unaware of the current trends in question-answering while criticizing the students' subpar Geography performance in the KCSE 2008 (MKRDEC, 2009; Omoro, 2014). Which suggests that in order to improve the outcomes of Geography map work, teachers should refrain from using an excessive amount of the question-and-answer method.

#### **2.3.3.7 Teaching multiple classes/grades (workload)**

Too much work affects one to produce good results as it is tiring. The same applies to educators if they have too much work. They might not produce quality results as expected. There are still schools in South Africa where there is only one educator responsible for certain subjects. For instance, you will find that a teacher is responsible to teach Geography to all FET phase grades. This implies that the educator will be expected to teach Geography from grade 10, 11 and 12. This will

be a burden because Geography is a complex subject that has two sections: the theory section and the map work (GIS) part.

School subject allocation and period is also a serious problem when it comes to geography instruction. The researcher noticed that some educators are allocated other subjects apart from Geography. The teacher will be expected to teach from the first to the last period. These teachers do not deliver the instruction properly because of their workload. As a result, learners suffer, and the school performance will be poor. In some instances, you find that the timetable is not prepared in time. A study by Luntungan (2012) compared switching from instructing a large class to a small one, and the findings indicated that student teaching in small groups produces effective results. According to a study by Chirwa and Mubita (2021), teachers have a tendency to avoid using ICTs because of the overcrowding of students in the classroom, which makes it challenging for the teachers to create graphics on ICT devices like laptops. Map work requires a teacher who is fully equipped with technology because certain sections like GIS requires one to be advanced in ICT in order to deliver them effectively'.

Nel (2010:70) has demonstrated that learning outcomes in South Africa are influenced by the school and class size. One of the issues that students have when studying map work in geography is a packed classroom. The DBE (2011a:67) recommends a learner-teacher ratio of 1:40 for elementary schools and 1:35 for senior schools. However, the researcher has noted that due to high student enrolment and a lack of infrastructure, the ratio in the majority of rural schools is 1:80. This frequently results in teachers having too much work, being unable to manage students' assessments, and occasionally utilizing ineffective teaching techniques during lessons. Nel (2010:77) claims that packed classrooms were one of the main issues with the OBE's introduction. Many teachers are required to manage large classes, and there are occasions where two professors will share a class with 270 students, according to Sao (2008:29).

According to Mukondeleli (2018), it is particularly difficult for professors and students to communicate in a large class since it is difficult for teachers to simultaneously watch and evaluate all of the students' responses. Classrooms with too many students are challenging to manage. Most teachers agree that it is challenging to

maintain good order and foster student participation in large courses (Jacobs et al., 2011:181). The teacher will also have to cope with students of all ages and skill levels when a class is overloaded due to the difficulty of learner variety. According to Jacobs et al. (2011:181), other issues with large classrooms include the lack of student textbooks and the teacher's inability to provide each student personalized attention. This assertion is supported by the provincial report on the monitoring of school and ready from January 2010 which found that there were not enough classrooms in 29 secondary schools in the Vhembe District and not enough student furniture in 30 secondary schools (DBE for Limpopo ,2010:11).

According to Mukondeleli (2018), teachers of Geography map work encounter difficulties in terms of covering the topics, time constraints and workload. This happens because in situations where a teacher is teaching Geography in many grades, they end up not coping and then opt to only teach in their own pace and end up not following the Annual Teaching Plan (ATP) provided by the department. In this case, the educators only teach sections that cover assessment that will be written during the term; and because of their workload and limited time, they end up not having enough time to cover the content that they had left out or did not teach properly. This affects learners and means that Grade 11 learners will be progressed to Grade 12 while they lack certain content from Grade 11 since they were not taught. So, they will struggle to understand certain things in Grade 12 because they have no prior knowledge of that content. For Grade 12 learners, it will disadvantage them during examination because the question papers are set nationally. Examiners assume that teachers have covered all the content with their learners (Mukondeleli, 2018). Abubakar, Bello, Hussain, and Bello (2021) state that the West African Examination Council (WAEC examiner's report) revealed that learners' performance was appallingly poor since they were unable to recognize basic topographical features due to inadequate map-work knowledge. According to the research, they also did a terrible job of describing settlement and redress. Additionally, Bock (2003), cited by Naxweka (2018) study on the challenges student teachers faced when reading and interpreting spatial data about landforms on 1:50 000 Topographic maps, showed that the students' teachers had trouble with basic mathematical calculations, encountered challenges when reading and interpreting maps, and either did not know how to calculate the vertical interval or were unfamiliar with the concept

despite the concept's frequent use. This suggests that the students' Secondary Geography map work teachers did not cover enough material. This suggests that the students' Secondary Geography map work teachers did not cover enough material.

## **2.4 PROBLEMS ENCOUNTERED IN THE CURRENT AND PREVIOUS CURRICULUM ON THE SUBJECT GEOGRAPHY IN SOUTH AFRICA**

Previously, most teachers had problems in teaching Geography, more especially the map work or Geographic Information System (GIS) part. Most said it was difficult because they cannot interpret maps, whereas others stated that it includes calculations, and most of them are not familiar with mathematics (Mukondeleli, 2018).

These problems were mainly because of colonization in the past because Western countries colonized our continent and made almost everything Western, including our education system (Fredman, 2012). The issue of language where Africans were forced to learn each subject in either English or Afrikaans had a great impact because it was not easy for Africans to understand content that was taught in foreign languages, and the fact that they would use examples in their own countries and places, where some of the Africans had never been (Fredman, 2012).

The other problem was that of choosing subjects. Some opted not to study mathematics because it was difficult only to find that there are specific topics in Geography that require knowledge of mathematics.

The other issue was that of lack of materials where they lacked the resources necessary to enable the teaching and learning of geography. For example, materials such as maps or globes were not enough (Mukondeleli, 2018).

The curriculum was also affected by colonization. It is because of the above reasons that the curriculum needs to be reviewed time and again in order to meet all the interactions of elements that compromise the total curriculum (Fredman, 2012). It is because of some of the above matters that the country has acquired a low pass rate in Geography recently.

It is also because of the above reasons that most teachers opted to teach the theory part of Geography because they have little or no knowledge of GIS, and therefore, it becomes difficult for them to teach map work.

This is why it is understandable that the department started with the process of revising CAPS so that it can be updated with the latest developments as well as the decolonization of education movement to do away with any problem that might hinder teaching and learning.

## **2.5 Summary of literature review**

Literature review shows that the lack of educational resources is still a challenge in the teaching and learning of map work. It also revealed that the lack of GIS software and labs makes it difficult to teach map work in countries like Turkey.

The literature also reveals that teachers' attitudes towards Geographic Information System negatively affects map work performance as they struggle to understand and teach it. This also revealed that textbooks do not contain clear maps, which makes it difficult for learners to interpret.

Literature also reveals that curriculum changes affect the teaching of map work as teachers struggle to understand new approaches from what they already know. It also revealed that some African countries like Kenya also an experience challenge in the teaching of Geography, but nothing is done to address the issue. Teaching multiple classes has also been revealed as the reason for poor performance in map work as teachers do not cope. The literature also revealed that poor teaching methods influence the teaching and learning of Geography Map work negatively.

The literature reveals language as a barrier in the teaching and learning of map work. South African curriculum uses English as medium of instruction in classrooms and learners find it difficult to understand it as it is not their mother tongue.

The literature also revealed that educators' qualifications play an important role in achieving good quality results. The researcher has observed that some HODs have been appointed not because they are qualified but because they have been teaching in that school for years. This is a huge blow to Geography as a subject because you

find that the school was actually looking for a head of department of Geography. But because they wanted to create a promotional post for their long serving employee, they end up giving the post to an undeserving candidate. This will disadvantage not only learners' performance but educators as well, because should they encounter challenges while teaching Geography map work, they must seek clarity from the heads of department who do not have much knowledge of the subject.

These types of heads of department tend to have a negative attitude towards Geography because they have little or no knowledge of the subject. So, they tend to ignore educators' problems when they bring them to their attention, which is why some teachers tend to skip sections that they do not understand. In her study, Maduane (2016) found that 43, 75% of teachers strongly agreed that they occasionally miss to assign Geography map work.

The researcher also observed that unqualified heads of department tend not to seek clarity from Geography subject specialists/advisors. Most of them do not even further their studies. In some instances, they would expect educators to look for information themselves.

## **2.6 CONCLUSION**

Findings from the literature review presented problems experienced by Geography educators, learners and HODs when teaching and learning map work both locally and internationally.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

The research methods and design employed in the study are described in this chapter. The components of the qualitative research methodology — sampling, data collection, data analysis, and ethical consideration — were covered.

#### **3.2 RESEARCH PARADIGM**

This study used the interpretivism research paradigm which contends that as humans do not live-in laboratories and are constantly influenced by their surroundings, it is inappropriate to research them in laboratory settings (Plooy-Cilliers, 2014). The study was informed by the interpretivism phenomenology tradition, which holds that people give meaning to both their own and other people's behaviours because they believe that human action is meaningful (Plooy-Cilliers, 2014; Bryman, 2012). Because the researcher's aim was to evaluate and understand grade 12 teachers', learners', and HODs' point of view on the difficulties of teaching and learning map work, the paradigm was pertinent to the study.

#### **3.3 RESEARCH APPROACH**

The qualitative research approach, which explores the underlying qualities of subjective experiences and the significance linked to particular occurrences, served as the foundation for this study (Plooy-Cilliers, 2014). Since this approach deals with human existence it allowed the researcher to gather challenges that teachers, learners and HODs come across in the teaching and learning of Geography map work in Grade 12.

### **3.4 RESEARCH DESIGN**

This study used the exploratory research design, which entails a description of a case in relation to its larger context in an effort to comprehend its (the case's) specifics (Plooy-Cilliers, 2014). The design was relevant because the purpose of the study was to explore challenges of teaching and learning Geography map work in Grade 12. According to Mkhabela (2005), the exploratory research design is suitable to explore, gain new insights and discover new ideas related to the phenomenon under study. So, the design was relevant to this study since the phenomenon had rarely been investigated, and not much is known about challenges of teaching and learning map work in Grade 12 in Mankweng Circuit.

#### **3.4.1 SAMPLING**

According to Maree (2010), sampling is how a subset of the population was chosen for the study. This study adopted purposive sampling, which enables the researcher to deliberately select the components that should be included in a sample (Plooy-Cilliers, 2014). This method was selected because it allowed the researcher to select participants that added value to the study and to gather the necessary knowledge. Only teachers, HODs and learners affected by this problem formed part of the study. In this study, the researcher sampled 3 teachers, 3 HODs and 6 learners in Mankweng Circuit who are affected by this problem. The sample consisted of 3



schools. In each school, 1 teacher, 1 HOD and 2 learners were sampled to participate in the study. The total sample was made of 12 participants.

#### **3.4.1.1 Population**

According to Wiid (2013), the term "population" refers to the entire set of individuals or groups (social artifacts) that can provide information. The population of this study was Grade 12 learners who are doing Geography, teachers who teach Geography Grade 12 and HODs of Geography in Grade 12.

### **3.5 DATA COLLECTION**

In-depth interviews were used as a tool of gathering data of the study. Plooy-Cilliers (2014) defines an in-depth interview as a qualitative data gathering strategy that enables you to ask participants questions in order to learn more about their perspectives, thoughts and beliefs with regard to a specific phenomenon. This technique was selected because it gives you an opportunity to ask participants to clarify issues and to ask follow-up questions. There was an interview guide in each group, which were conducted after school to avoid distracting teaching and learning process.

#### **3.5.1 Data collection instrument**

##### **3.5.1.1 In-depth interview**

These are instruments that were used to gather data in the study. Three interview schedules were developed as instrument of data gathering, namely: learners' challenges when learning map work (See appendix A), teachers' challenges when teaching map work (See Appendix B) and HODs' management and understanding of challenges of teaching and learning Geography map work (See Appendix c).

The learners' interview schedule consisted of questions that required them to voice out challenges that they come across when learning Geography map work, how they

deal with the problems, how their parents assist them with their school and what they think could be possible solutions to their problems.

The teachers' interview schedule consisted of questions that required teachers to explain challenges that they encounter when teaching Geography map work, how they deal with the problems, what they do to learners who have problems in map work, if they get the support they need from their head of department and what they think could be the solution to the problem.

The HODs interview schedule consisted of questions that required them to explain how they manage teaching and learning, how they monitor teachers and learners' progress, how they assist teachers and learners with the problems that they encounter, if they get the necessary support from the school and the Department of Education with regard to resources, and what they think can be done to improve the problem.

#### **3.5.1.2 Observations**

Observations were used as another method of data collection to supplement the interviews. The study used the on-site observation. The on-site observation technique was chosen because it ensures the accuracy of the data collection to provide for the necessary latitude that existed in data collection through the use of interviews (Maduane, 2016). While conducting interviews with teachers and learners, the researcher watched both groups to gauge how they felt about creating geography maps. In order to determine whether they have a favourable attitude about geography, the researcher watched them.

The three schools' HODs, teachers and learners all gave the researcher permission to speak with them. The exchanges could be recorded by the researcher. The researcher's primary objective was to observe how teachers and learners felt about Geography. They all expressed enthusiasm in Geography as a topic, but they struggled with how to approach and teach several aspects of map work. If the Department of Education can provide them with the required assistance, they are all eager to study.

### **3.5.1.3 Document analysis**

The study also employed a tool for document analysis. The goal of employing documentary analysis is to close any gaps that could arise as a result of the use of interviews and observations as a method of data collection being weak (Maduane, 2016). The researcher employed document analysis to ascertain if teachers record learners' performance in both formal and informal assessments in order to recognize learners who are struggling and need additional support.

There was evidence of Cass portfolios for both teachers and learners that keep records of learners' formal assessment tasks. However, there was no record for informal assessment task and list of learners that need special attention in Geography. Which implies that Geography teachers do not keep record of struggling learners.

## **3.6 DATA ANALYSIS**

Thematic Analysis was employed to examine data. According to Plooy-Cilliers (2014), when you perform thematic analysis, the goal is to compile data into groups with linked meanings, which you may then assign to broader categories. In this study, data was analysed using eight stages recommended by Zhang (2009) and Plooy-Cilliers (2014). These steps are: 1 prepare the data; 2 define the coding unit; 3 create classifications and a coding system or conceptual framework; 4 code the texts; 5 test your coding in a sample text; 6 assess the uniformity of your coding; 7 make inferences from the coded data (interpret your data); and 8 present your research methods and results. According to Strauss (1987), the objective of qualitative coding is data fragmentation rather than data counting (Plooy-Cilliers, 2014).

## **3.7 INTERNAL AND EXTERNAL VALIDITY OF THE STUDY**

The researcher focused on the following qualitative research quality criteria (credibility, transferability, dependability, conformability). Credibility is the alternative to internal validity. According to De Vos (2001), the goal of credibility in research is to show that the investigation was done in a manner that the subject matter or theme was exactly recognised and described.

### **3.7.1 Credibility**

According to Plooy-Cilliers (2014), how properly the researcher assessed the data that the participants submitted is referred to as credibility. In order to establish trust with the participants and gather correct data, the researcher spent more time with them.

### **3.7.2 Transferability**

Transferability is the capacity of outcomes to be used in a similar circumstance and yet produce the same effects (Plooy-Cilliers, 2014). The researcher ensured transferability by ensuring that the results of the study are used in other research studies.

### **3.7.3 Dependability**

Dependability is the degree to which the data gathering process, data analysis and the theory derived from the data are all integrated (Lincoln, 1985; Shenton, 2004; Collins, 2003; Plooy-Cilliers, 2014). The researcher used interviews to test the dependability of the study and tried to get the same answers from participants by asking them the same questions. Dependability is defined by Nel (2010) as the likelihood that should the study be duplicated; the results will be comparable.

### **3.7.4 Confirmability**

The degree to which the data gathered support the researcher's findings and analysis is known as confirmability (Plooy-Cilliers, 2014). To help others evaluate the research design, the researcher adequately detailed the research procedure (Collins, 2003; Lincoln, 1985; Shenton, 2004; Plooy-Cilliers, 2014). Confirmability demonstrates the objectivity (biasedness) of the study (Mukondeleli, 2018). In this study, the researcher ensured confirmability by not being biased when interpreting information supplied by participants. Data was interpreted fairly and not tampered with.

### **3.8 ETHICAL CONSIDERATIONS**

#### **3.8.1 Permission for the study**

To gain access to participants, the researcher obtained ethical clearance from the University's Ethics and Research Committee. Furthermore, the researcher obtained permission from the Limpopo Provincial Department of Education and the circuit manager in order to gain access to teachers, learners and HODs who took part in the study. The School Governing Body (SGB) was also informed as they form part of the school. Interviews with learners, teachers and HODs was done separately (refer Appendix K).

#### **3.8.2 Informed consent**

Forms of consent were given to participants to sign, and they were also informed of the purpose of the study (refer Appendix J). Assent was ensured by giving parents a request form. The form informed them about their child's participation in the research process (refer Appendix H).

#### **3.8.3 Confidentiality and anonymity**

The researcher ensured that identities of participants remained confidential, and that the information they provided was only used for educational purposes. Additionally, the researcher showed respect for information from participants, and made sure that no one else saw the data. Instead of using participants' real names, fake names were used.

#### **3.8.4 Voluntary participation**

According to Plooy-Cilliers (2014), the study project must adhere to moral, ethical and statutory requirements of science (morals, ethical and legal standards). Thus, the current study complied with all terms and conditions to conduct ethical or sound research. All participants were not forced to take part in the study or to stop participating at any time they feel they want to.

#### **3.8.5 Ethical considerations related to data collection.**

Ethics in relation to data gathering includes not violating the privacy of participants. To minimize the risks of doing unethical research, permission to collect data was requested beforehand. Each participant received information on the scope and goals of the study. Participants were assured of confidentiality and anonymity; and that pseudo names would be used instead of their real names, where necessary. Data was collected and written down without any alteration. Data collected was not edited by the researcher and he did not answer questions by himself. Participants' morality and prosperity were retained.

### **3.9 CONCLUSION**

The goal of this chapter was to discuss procedures for gathering and analysing data. Discussions were held regarding the research design and qualitative research methodology. Interviews, sampling and data-collection tools were also discussed.

## **CHAPTER 4**

### **DISCUSSION / PRESENTATION / INTERPRETATION OF FINDINGS**

#### **4.1 INTRODUCTION**

This chapter concentrated on qualitative information received from three heads of department of Geography, three Geography teachers, and six Grade 12 Geography students at three schools in Mankweng Circuit, Limpopo Province.

#### **4.2 DATA MANAGEMENT AND ANALYSIS**

In-depth interviews were used as a method of data gathering. At least 12 participants were used as a sample. Research questions and existing literature were analysed and interpreted in connection with the findings of the study.

#### **4.3 RESEARCH RESULTS**

Individuals who participated in the study were from three different schools. They all experienced challenges when teaching and learning Geography map work.

##### **4.3.1 ANALYSIS AND INTERPRETATION OF DATA: HEADS OF DEPARTMENT INTERVIEWS**

This section focuses on analysis and interpretation of data collected from heads of department of Geography.

#### **4.3.1.1 Challenges related to the teaching and learning of Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province.**

##### **4.3.1.1.1 Vertical Exaggeration and Geographic Information Systems**

The heads of department of Geography indicated that the most difficult topics in map work that learners and teachers usually encounter are calculations, in particular Vertical Exaggeration (VE) and Geographic Information System (GIS).

Example 1

*HOD 1: "The most difficult sections of Geography map work for teachers are GIS".*

The results from literature showed that Geography educators have a negative attitude as GIS was barely used in lectures, and more than half of the teachers had no clear concept of what it is (Demirci, 2009). This implies that teachers must be lifelong learners and keep themselves updated with the current trends in curriculum developments.

##### **4.3.1.1.2 Resources support from school and the department of education**

The heads of department indicated that they do get support from the school management, particularly when it comes to the sourcing of LTMS, and that they also attend organised departmental meetings like content workshops.

Example 1

*HOD 2: "Content workshops are fruitful however I feel like they should be often like once every month because we only attend once a year, and it becomes a problem when we need assistance from our curriculum advisors".*

According to the literature review, 19 schools in Vhembe District did not have enough textbooks for grades 8 to 12 according to the provincial report in school monitoring (Mukondeleli, 2018). According to Mukondeleli (2018), schools should have a wealth of materials in order to teach map work since Learner Teacher Support Materials (LTMS) in this subject play an important role in the teaching and learning process. This suggests that there are still schools that struggle to get support from the department when it comes to teaching and learning resources.



#### 4.3.1.1.3 Management of teaching and learning

The heads of department responded according to how they manage teaching and learning on a daily basis. They indicated that they manage teaching and learning by using monitoring tools such as written work template and analysis of results for both teachers and learners. However, they do not have proper monitoring tools.

Example 1

*HOD 1: "Sometimes it becomes difficult to manage teachers and learners when you do not have the proper monitoring tools".*

#### 4.3.1.2 Monitoring of the teachers and learners' progress

The heads of department indicated that monitoring is divided into categories. It is usually done weekly, monthly and quarterly, where they monitor and target formal tasks such as tests and examination.

Example 1

*HOD 1: "Written work monitoring weekly and there is another one that I do monthly which usually I do it for informal tests and then quarterly monitoring which we usually target formal task only".*

#### 4.3.1.3 Assistance to teachers and learners

The heads of department indicated that they assist teachers who have difficulties in teaching Geography map work by organising internal workshops or by outsourcing good map work educators from other schools for assistance.

Example 1

*HOD 1: "We outsource teachers who are mastering this difficult topic in particular".*

The results from literature showed that most teachers in South Africa have a considerable teaching experience (Ahiaku, Mncube & Sunday, 2019). However,

experience does not necessarily mean that a teacher can master the content well. Amosun (2016) stated that a teacher's experience should extend beyond the classroom and the teaching of certain subjects. They must participate in national marking where ideas from other examiners on various themes are exchanged. This implies that there are still teachers who teach Geography without knowledge of the content. Also, social constructivism encourages collaborative teaching and learning. So, it will be a good idea for teachers as they will be learning new ideas from other teachers.

#### **4.3.1.4 Possible strategies of teaching and learning grade 12 map work**

The heads of department of Geography suggested that map work teaching and learning can be improved by using local maps of places that learners are familiar with.

Example 1

*HOD 2: "I feel learners find it difficult to interpret maps because usually they are supplied with maps of places, they are not familiar with or have never been before. I think it will be easier for them to interpret maps of places they are familiar with".*

The literature demonstrated that the map-skill illustrations utilised in Turkey's Geography textbooks could not go beyond theoretical understanding, and that the lack of fieldwork also serves as evidence that the problem is not being prioritised (Artvinli, 2020). This implies that Geography textbooks must be fully equipped with information about GIS and clear visible local maps that learners are familiar with.

### **4.4 ANALYSIS AND INTERPRETATION OF DATA: TEACHERS' INTERVIEW**

#### **4.4.1 Challenges faced by teachers in teaching grade 12 map work.**

#### 4.4.1.1 Teachers challenges in teaching grade 12 map work.

Geography map work educators indicated that lack of background in Geography by learners is one of the challenges that they encounter when teaching map work in Grade 12. They said that learners lack prior knowledge of Geography from previous grades which is grade 10 and 11. Geography educators also indicated lack of teaching resources such as maps and textbooks, lack of teacher training, limited contact time, overcrowding in classrooms and lack of funds for fieldwork are some of the challenges that they come across when teaching map work. They also indicated the issue of the language barrier where learners struggle to grasp some of the concepts, especially GIS concepts. This affects teachers' pace of teaching because they take a lot of time explaining until learners understand.

##### Example 1

Teachers1: *"Most of the learners do not know the basics of Geography, in Grade 12 you find that they lack information from the lower grade which is important"*.

##### Example 2

Teacher 2: *"Learners need to go for fieldwork to see those landforms they are taught in school and any other Geographical features and again we lack teacher training as we do not attend Geography workshops regularly"*.

*"We do not have enough written work output due to lack of time, we do not have enough contact time"*.

##### Example 3

Teacher 3: *"Slow learners honestly they cannot cope with the scope we are given; Geography has got a lot of scope that we get from the Department it is hard for them to cope because majority of them are pushed or progressed to Grade 12"*.

The results from literature showed that Geography student teachers still lack content knowledge from secondary education in Northern Ireland (Dolan, 2014). A

study by Ahiaku, Mncube and Sunday (2019) indicated that a further barrier to the teaching and learning of map work in South African schools is lack of resources like maps, textbooks and computers. This implies that the Department of Education must supply schools with enough teaching and learning resources. Social constructivism believes that learners learn well when they are able to link current knowledge from their previous grade. This implies that lower grade teachers should avoid skipping sections on map work because learners are going to struggle in Grade 12.

#### **4.4.1.2 Teachers challenges when teaching map work sections.**

Geography teachers indicated that it is difficult to teach GIS because it was not part of the syllabus in the past and is new to them, which is why they struggle to teach GIS. They indicated that as teachers, they were not trained enough in GIS, and that it is also difficult for learners to understand and relate to GIS. They also indicated that GIS requires Information and Communication Technology (ICT). They also do not have computer labs in schools since GIS requires practical work.

##### Example 1

*Teacher 1: "GIS part because is new to us and I remember two years back we had to request the department to workshop us I think they also struggle with it as they were reluctant hence, we had to request them for a workshop".*

##### Example 2

*Teacher 2: "Geographical Information systems because it requires ICT labs and learners understand better when they do things themselves".*

##### Example 3

*Teacher 3: "GIS is difficult to teach because as teachers we were not trained enough to teach GIS".*

The findings of the literature revealed that inadequate hardware and software is one of the challenges to successfully integrate GIS into Turkey's geography curriculum (Demirci, 2008). Incekara (2010) states that some of the problems

affecting the adoption of GIS and map work include lack of Geography map work classroom, laboratories and source materials. This implies that GIS labs must be compulsory in each and every school that have Geography in their curriculum. It also implies that there must be frequent GIS workshops for Geography educators.

#### **4.4.1.3 Possible strategies that can be used in the teaching and learning of grade 12 map work.**

##### **4.4.1.3.1 Dealing with problems regarding map work teaching**

Geography teachers indicated that they contact educators from other schools for assistance if they encounter challenges when teaching Geography map work. They also indicated that when it comes to GIS, they use their smart phones and laptops to play videos so that learners can relate and see that what we talk about is real and happening out there. This makes teaching and learning easier. Teachers also indicated that they often resort to code switching and teach learners in their own language so that they can understand.

Example 1

*Teacher 3: "Sometimes I find myself doing code switching whereby some concepts I must draw them down to their normal language so that they can at least understand".*

Maduane (2016) argues that teachers of Geography who struggle conceptually often teach the topic in their mother language (MT) in order to promote learning and make it easier for students to understand. This implies that Geography teachers must refrain from code switching because learners are only assessed in English during tests and examinations.

##### **4.4.1.3.2 Dealing with learners who have difficulties in learning map work.**

Teachers indicated that they provide extra lessons and more written work output to write for learners who have difficulties in understanding Geography map work so that

they can pass. They also indicated that they use peer teaching, especially when it comes to calculation, which is complex.

#### Example 1

*Teacher 1: "I separate the group that is doing well with those who are struggling then I assist the struggling group on daily basis".*

#### Example 2

Teacher 2: "I let their peers teach them and I monitor their teaching especially when it comes to calculations".

#### Example 3

*Teacher 3: "Normally I do have extra lesson with them because during extra lessons I can break down topics and give them previous question papers with extra maps and we start by targeting those easy questions to boost their confidence then we move to middle order questions".*

This implies that Geography map work educators must always make time for those learners who encounter challenges during map work lessons.

#### **4.4.1.4 Teachers support from the schools.**

Some Geography teachers indicated that they do not get enough support from the school, heads of department and the department. They indicated that they do not have regular subject meetings with the heads of department where they can discuss challenges that they experience when teaching the subject. They also indicated that the government curriculum budget is not enough as there are shortages of maps and computer labs.

#### Example 1

*Teacher 2: "No the support they give is not enough because we do not have regular subjects' meetings with the heads of department at all".*

Some map work teachers indicated that they do get the support they need from the school and the heads of department as their schools have installed some technological gadgets like plasma television where they can play Geography-related videos to their learners.

Example 2

*Teacher 3: "Yes I do get the necessary support from the school because we now even have technological gadgets like television so that learners can see".*

This implies that Geography HODs must have regular subject meetings with teachers so that they can tackle topics that they find difficult to teach.

#### **4.4.1.5 Improving map work teaching**

Geography educators indicated that map work teaching can be improved through regular workshops as they still need a lot of training, especially when it comes to GIS. They also indicated that curriculum advisors must be engaged more so that they must have more subject briefings if possible once every quarter. They also suggested that the government must at least try to get some GIS specialists once in a quarter to workshop teachers on GIS topics. Educators also indicated that a one-day workshop is not enough.

Example 1

*Teacher 1: "Workshop if they arrange workshops we will attend because we want to learn and give learners the right information. I think the best thing that they can do is to train us".*

Example 2

*Teacher 2: "I think we must engage curriculum advisors regarding this problem, because it affects the quality of Geography results".*

Example 3

*Teacher 3: "I think somehow the government must try and get GIS specialist to assist us when it comes to GIS topics, and they can do this at least 3 times a year during the beginning of every quarter".*

This implies that the Department of Education should get GIS specialists who will workshop curriculum advisors on topics related to GIS as it is the section of map work that most teachers find difficult to teach as they are not familiar with it.

## **4.5 ANALYSIS AND INTERPRETATION OF DATA: LEARNERS' INTERVIEWS**

### **4.5.1 Challenges faced by learners in learning map work.**

#### **4.5.1.1 Learners' challenges in learning map work**

Learners indicated that they find it hard to identify features on both the topographic and orthophoto maps. They also indicated that they find GIS difficult and cannot differentiate between Vector and Raster data.

#### Example 1

*Learner 1: "Map interpretation is difficult for me because I cannot measure the distance on the map since I cannot even identify what they want me to measure".*

#### Example 2

*Learner 5: "GIS when it comes to data layering, I do not understand the difference between Vector and Raster data".*

#### Example 3

*Learner 6: "We sometimes do not understand the concepts/ features they want us to look for on the map, we get confused or end up having the wrong lead".*

Okwilagwe's (2012) study showed that learners in Nigerian schools still cannot identify features on both the topographic and orthophoto maps. This implies that map work teachers must put more effort when teaching map interpretation and GIS sections.



#### **4.5.1.2 Possible strategies that can be used in the teaching and learning of grade 12 map work.**

##### **4.5.1.2.1 Ways of dealing with map work learning problems**

Learners indicated that they resort to peer teaching and the group work method as they sometimes understand their peers better than educators in class. They indicated that it is better when they gather and discuss difficult topics in groups as they go through past exam question papers. Sometimes this is fruitful.

Example 1

*Learner 1: "Sometimes our teacher is fast when teaching and I find it hard to understand what she is saying, I take time to grasp what she was teaching but when I am discussing with my peers it is easy to understand".*

This indicates that teachers must encourage peer teaching and group work during Geography map work lessons as learners seem to understand better when they study in groups with their peers.

##### **4.5.1.2.2 Learners' assistance from the teachers concerning map work learning problems.**

Geography learners indicated that teachers do assist them where they do not understand. They indicated that they sometimes give them previous exam papers and outsource teachers from other schools to come and assist them.

Example 1

*Learner 5: "The teacher is doing his best actually, he goes as far as telling us the structure of questions on the section of GIS, it just that I do not understand GIS at all".*

Example 2

*Learner 6: “Our teacher gives us study guides, previous question papers and sometimes have individual sessions with us”.*

This implies that some map work teachers go an extra mile in assisting struggling learners. It also indicates that teachers must try to keep up with current changes in Geography map work to ensure that the effort they take yields good quality results.

#### **4.5.1.3 Parents involvement in map work learning**

Most learners indicated that their parents are not involved in their schoolwork. They said that their parents do not help them with their homework or any other schoolwork at all. Only two out of the six learners who were interviewed indicated that their parents do assist them with their schoolwork.

Example 1

*Learner 1: “Yes they help me every time I struggle with anything concerning my school, they assist me”.*

Example 2

*Learner 5: “They help me most of the time, they even buy me data to search education stuff on the internet”.*

This implies that many parents are still not involved in their children’s schoolwork, which is bad because lack of parental involvement in their children’s school work affects learners’ performance in general. A learner sometimes needs help and motivation from their own parents to do well in school. Parents must show interest in their children’s education and work together with educators so that learners can yield good quality results. Social constructivism implies that learning is an interaction between teachers, learners and other stakeholders: the community and parents. This means that by helping their children with homework, parents are involved in their schoolwork.

#### **4.5.1.4 Improving map work learning**

Learners indicated that teachers lack information on how they can approach map interpretation questions. They indicated that textbooks introduce what map work is and the next chapter starts something else. Learners also indicated that the Department of Education should get GIS and map work professionals to teach them.

Example 1

*Learner 3: "I think the school must find professional map work specialist to teach us at school".*

Example 2

*Learners 6: "They do not give us information on how to interpret maps in our textbooks, I think they must add the information because we go an extra mile looking for the information".*

The results of the literature showed that maps geography textbooks in the UK are helpful, and the task sections are both real-life and practical, allowing students to access higher order thinking skills (Artvinli, 2020). As a result, their geography textbooks were deemed to be theoretical, functional, contemporary and beneficial (Artvinli, 2020). This implies that the department must ensure that the textbooks issued to schools must have all the necessary information on how to teach and approach map work questions.

#### **4.6 OBSERVATION DATA**

The researcher's main focus was to monitor teachers and learners' attitude towards Geography and they all showed interest to Geography as a subject, they just did not know how to approach and teach some sections of map work. They are all willing to learn should they get the necessary support from the Department of Education.

#### **4.7 DOCUMENT ANALYSIS DATA**

The researcher used document analysis to determine if the teachers keep records of learners' performance both formal and informal assessment to identify learners who experience challenges and needs more attention.

There was evidence of Cass portfolios for both teachers and learners that keep records of learners' formal assessment tasks. However, there was no record for informal assessment task and list of learners that need special attention in Geography.

#### **4.8 OVERVIEW OF RESEARCH FINDINGS**

The main Objective was to examine challenges related to the teaching and learning of Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province. Qualitative data was obtained in order to respond to this objective and was analysed thematically. Data was gathered from heads of department, teachers, and learners using an interview schedule. Findings of the qualitative data showed that GIS is the most difficult section in map work that heads of department, teachers and learners find challenging. It further showed that lack of regular subject meetings with teachers and heads of department and curriculum advisors has a negative impact in the teaching of map work. The findings showed that learners still struggle when it comes to map interpretation, which negatively affects their performance. The findings also showed that lack of field work and GIS labs makes map work teaching difficult to both teachers and learners.

#### **4.9 CONCLUSION**

Data from interviews were presented in this chapter. The data was based on the challenges experienced by teachers, heads of department and learners in the teaching and learning of Geography Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province. All the participants who took part in this study agreed that they encounter challenges when teaching and learning Geography Grade 12 map work.

## **CHAPTER 5**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 INTRODUCTION**

The overview of the study, restrictions, findings and recommendations are presented in this chapter. Based on the research findings, the conclusions of the study and suggestions are explored.

#### **5.2 SUMMARY AND INTERPRETATION OF RESEARCH FINDINGS**

Findings from the research questions, a summary of literature review, and the conclusions from the qualitative data are all presented in the summary of the study.

##### **5.2.1 How the study responded to the research questions**

**Question 1: What are the challenges faced by teachers and HODs in the teaching of grade 12 map work?**

Teachers and heads of department revealed that teachers find the GIS section difficult to teach because it is new and was not part of the old Geography syllabus. Other challenges experienced by educators include the following: lack of prior knowledge of Geography by learners, lack of teaching resources such as maps and textbooks, lack of teacher training, limited contact time, overcrowding in classrooms and lack of funds for fieldwork. The results from literature showed that Geography

teachers still lack content knowledge from secondary education in Northern Ireland (Dolan, 2014). This shows that the study has responded to the research objective.

**Question 2: What are some of the challenges faced by learners in learning map work?**

Heads of department revealed that learners experience difficulties in Geography map work. This showed that learners still experience challenges such as how to calculate Vertical Exaggeration (VE) and Geographic Information Systems, and how to interpret both topographic and orthophoto maps. This shows that the study has responded to the research objective.

**Question 3: What are the possible methods and strategies that can be used in the teaching learning of grade 12 map work?**

Geography teachers and learners indicated that map work teaching can be improved through regular subject meetings and GIS workshops where specialists can workshop them on what GIS is and how to teach it. Heads of department also indicated that map work teaching can also be improved by using local maps in map interpretation.

**5.2.2 How each objective was achieved**

The study was focused on three objectives.

**Objective 1:** It was aimed at addressing Geography teachers and HODs in the teaching of grade 12 map work. The objective consisted of 13 statements. The statements included challenges they come across when teaching and managing Geography grade 12 map work. The results showed that teachers struggle with GIS and lack of teaching resources. Therefore, it was confirmed that lack of GIS knowledge is a barrier to Geography map work teaching and learning.

**Objective 2:** Addressed geography learners when learning map work. The learners responded to four statements. The learners responded proved that map interpretation and GIS were barriers to their learning of Geography map work.

**Objective 3:** The objective focussed on possible strategies that can be used in the teaching and learning of Geography map work. All participants responded to this objective and the findings suggested that there should be GIS specialist to assist with the GIS section and the department should normalise using local maps that learners are familiar with.

### **5.2.3 Summary of research findings**

Qualitative data in this study revealed that indeed heads of department, teachers and learners still encountered challenges in the teaching and learning of Grade 12 Geography map work.

#### **5.2.3.1 Challenges teachers encounter in the teaching and learning of Geography Grade 12 map work.**

Data revealed that the most difficult sections in map work is Geographic Information System (GIS). Teachers also revealed that lack of background in Geography by learners is a challenge when teaching map work. The language barrier was also indicated as a challenge by teachers. Data also revealed lack of teaching resources such as maps and textbooks, lack of teacher training, limited contact time, overcrowding in classrooms, lack of funds for fieldwork and the unavailability of GIS labs as challenges that they encounter in the teaching of Grade 12 map work.

#### **5.2.3.2 Challenges encountered by learners in the teaching and learning of Geography Grade 12 map work.**

Data revealed that learners struggle with map interpretation as they find it hard to identify features on both the topographic and orthophoto maps. Data also revealed that learners do not understand GIS at all. HODs revealed that learners still struggle with calculating vertical exaggeration.

### **5.2.3.3 Suggestions on improving Geography map work teaching and learning.**

Findings from data suggested that the Department of Education must use local maps as it will be easier for learners to interpret since they will be familiar with the place. They must also get specialists to train both teachers and learners about GIS at least every quarter.

### **5.3 LIMITATIONS OF THE STUDY**

The study had the following limitations:

- The study was restricted to Mankweng Circuit in Capricorn South District of Limpopo Province. As a result, the conclusions of the study cannot be extrapolated to a population with a broader geographic scope.
- Due to the size of the schools, only two heads of department were interviewed because the other school did not have an HOD of Geography.
- The investigation was only conducted at three secondary schools in Mankweng Circuit due to time and resource limitations. A small sample of 12 participants was used in the study. This indicates that had the study included more schools, different findings might have emerged.

### **5.4 CONCLUSION**

Based on the findings of the study, the following conclusions can be made heads of department of Geography should hold regular subject meetings with map work teachers so that they can discuss challenges they encounter during lessons. The Department of Education should arrange quarterly GIS workshops where they would get specialists to workshop teachers and learners about GIS. The Department



should also provide proper teaching resources to make the teaching and learning of map work easier for teachers and learners.

## **5.5 RECOMMENDATIONS**

The study suggests the following:

- **The need for learners to learn geography in their home language.**

This will be ideal because some learners have problems with the English vocabulary, which is understandable because English is not their mother tongue. Even if a teacher can teach them Geography in their own language, at the end of the day, the question paper will be written in English, which becomes a problem to a learner who does not understand it.

- **The need for fieldwork as a compulsory teaching method of Geography**

Geography is a subject that studies phenomena at a particular place. It is advisable that the department introduce fieldwork as a compulsory teaching method for certain topics in Geography, like maps, pollution, and Geomorphology so that learners can see what they are being taught with their own eyes. Teachers must organize fieldtrips so that learners can be taken to different places to observe and see phenomena. Learners learn well that way and they will always be able to recall facts because they have seen what they are being taught in class.

- **All learners that study Geography must also study mathematics**

This will solve a situation where a learner fails to understand some of the topics in Geography because they require mathematical knowledge, and the learner has little or no knowledge of mathematics. This will help especially on the map work part where one needs to calculate distances and other things on the map. This will also be useful because the next generation of Geography teachers will be well equipped with all the necessary skills to deliver the whole content without difficulties.

- **GIS workshops for Geography educators and HODs**

The introduction of compulsory GIS workshops for all Geography educators and HODs at the beginning of every school year and quarterly, where they will train new

and old educators and equip them with new trends in Geographic Information System technologies.

- **Well written textbooks with proper information on how to interpret maps.**

The Department of Education should provide schools with textbooks that are well-equipped with information on map interpretation so that learners can master the section during assessment tasks.

- **The use of local maps**

The Department of Education must normalise the use of local maps as it will be easier for learners to interpret maps of places that they are familiar with.

## **5.6 SUGGESTIONS FOR FURTHER STUDY**

The study has achieved its purpose on the teaching and learning of Geography Grade 12 map work. The study was limited to Mankweng Circuit in Capricorn South District, but it has provided a starting point for further research. In order to determine whether a similar study would yield similar results in the teaching and learning of Geography for Grade 12 map work, it is suggested that similar studies be carried out in other schools, circuits and districts.

## Bibliography

- Ablak, B. (2019). Determination of Map Literacy of Undergraduate Geography Students. *Review of International Geographical Education Online(RIGEO)*, 591-603.
- Abubarkar, A. B. (2021). Availability and Use of Visual Teaching and Learning Materials in Teaching Geography at Nassarawa Education Zonal Office . *The Universal Academic Research Journal*.
- Adeboye, J. (2015). Effect of Multimedia-Based Instructional package on secondary school students' Academic Achievement in Geography in Oyo State , Nigeria. *Ajol Journals*, 13(1):21-25.
- Adeyemi, S. (2014). Effect of Gender on Secondary School Students' Achievement in Mapwork. *European Journal of Education Studies,,* 6(1): 200-206.
- Adeyemi, T. (2008). Effective Teaching of Geography in secondary schools in Onda State, Nigeria. *Medwell Journals*, 3(2):200-206.
- Adunola, O. (2011). *The impact of teachers' teaching methods on the academic performance of primary school pupils in Ijebu-Ode local government area of Ogun State* . Ego Booster Books.
- Ahiaku, P. M. (2019). Teaching mapwork in South African schools: reflections from educators' experiences, concerns and challenges. *Journal of Gender, Information and Development in Africa*, 19-36.
- Alhosani, N. &. (2015). Geographic skills:a case study of students in the United Arab Emirates. *International Research in Geographical and Environmental Education* 24(1), 95-102.
- Amosun, P. (2016). Why Nigerian Geography Teachers Scarcely and Scantly Teach Map Reading and why Students are Scared of it. *African Educational Research Journal*, 4(2):42-48.
- Artvinli, E. &. (2020). How Do Geography Textbooks deal with Map Skills? A Comparison of Turkey and England. *Romanian Review of Geographical Education*, 9(2), 23-25.
- Ary, D. J. (2006). *Introduction to Research in Education (7th Ed)*. Australia: Thompson Wadsworth.
- Asikhia, O. (2010). Students and teachers' perception of the causes of poor academic performance in Ogun State secondary schools, Nigeria : Implications for counselling for national development . *European Journal of Social Sciences*, 229-242.
- Awiti, D. (2010). The Use of Discovery Methods in Our Schools. *Daily Nation* May 10, Pg.10.
- Bednarz, S. A. (2006). Maps and map learning in social studies. *Social Education*, 70(7),398-432.
- Bednarz, S. v. (2006). Europe and the United States: The Implementation of Geographical Information System in Secondary Education in Two Contexts. *Technology, Pedagogy and Education*, 15 (2):191-205.
- Bloch, G. (2010). The need fo S.A. to make the grade: what about the teacher's role? *The star* , 22:7.

- Bock, L. (2003). *Problems student teachers face in communicating spatial information about landforms on 1:50000 topographical maps. Unpublished Master's thesis.* Grahamstown: Rhodes University.
- Brau, B. (2020). Constructivism. In R. Kimmons & Scaskuriu (Eds.). *The Students' Guide to Learning Design.*
- Breidid, A. (2003). Ideology, cultural values and education: the case of Curriculum. *Perspectives in Education, 21(2):83-102.*
- Bryman, A. (2012). *Social Science research. 4th ed.* New York: Oxford University Press.
- Butt, G. (2002). Language and learning in Geography in Smith M.(ed). *Teaching geography in secondary schools, 200-211.*
- Butt, G. (2011). Globalization, Geography Education, and the Curriculum: What are the Challenges for Curriculum makers in Geography? *Curriculum Journal, 22(3), 423-438.*
- Chirwa, C. M. (2021). Preparedness of Teachers and Learners in the integration of Information Communication Technologies in the teaching and learning of geography in selected schools of Petauke District of Eastern Province in Zambia . *international Journal of Research and Innovation in Social Science(IJRISS) Volume V, 456-464.*
- Collins, J. &. (2003). *Business Research: A Practical Guide for Undergraduate and postgraduate Students.* New York: Macmillan.
- Council, N. R. (2006). *Learning to think spatially: GIS as a support system in the K-12 curriculum.* National Academics Press.
- Cresswell, J. (2009). *Research Design: Quantitative and Qualitative Approaches.* London: Sage Publishers Ltd.
- De Vos, A. S. (2001). *Research at the grass roots. 4th ed.* Pretoria: Van Schaik.
- Demirci, A. (2008). Evaluating the Implementation and Effectiveness of GIS-Based Application in Secondary School Geography Lessons. *American Journal Applied Sciences, 5(3): 169-178.*
- Demirci, A. (2009). How do Teachers Approach New Technologies: Geography Teachers' Attitudes towards Geographic Information Systems (GIS). *European Journal of Education Studies 1(1).*
- Department of Basic Education. (2015). *National Senior Certificate Diagnostic Report. Geography. .* Pretoria: Government Printers.
- Derry, S. (1999). A Fish Called Peer Learning: Searching for commomn themes. In A.M O' Donnell & King (Eds).
- Dolan, A. W. (2014). Student teachers' reflections on prior experiences of learning geography. *International Researchin Geographical and Environmental Education, 23:4, 314-330.*

- Donald, D. &. (2006). *Educational psychology in social context. Third Edition*. Cape Town: Oxford University Press, Southern Africa.
- Education, D. o. (2010). *Limpopo Provincial Report on the Monitoring of Schools Readiness in January*. Polokwane: Review Printers.
- Education, D. o. (2011). *Curriculum and Assessment Policy Statement (CAPS) for Geography in the Further Education and Training Band*. Pretoria: Government Printers.
- Education, D. o. (2020). *National Senior Certificate Diagnostic Report. Geography*. Pretoria: Government Printers.
- Education, M. o. (1996). *Educating our future: National Policy on Education*. Lusaka: Zambia Educational Publishing House.
- Education, N. C. (2018). why Geography Education matters. Retrieved from <https://www.nege.org/why-geography-education-matters>. Retrieved from <https://ww>
- Eldeson C., S. J. (2013). *A road Map for 21st -Century Geograph Education: Assessment (A report from the Assessment Committe of the Road Map for 21st Century Geography Education Project)*. Washington, DC: Nationa lGeographic Society. Washington: National Geographic Society.
- Ezuedu, S. &. (2014). Influence of Area of Specialization and Years of Teaching Experience of Geography Teachers on Their Level of Competency Performance in Teaching Map Work in Secondary Schools in Kogi State. *Research on Humanities and Social Sciences*, 78-84.
- Filgona, J. S. (2016, 11 15). Effects of Hands-on Learning Strategies on Senior Secondary School Students' Academic Achievement in Topographical Map Studies in Ganye Educational Zone Adanawa State, Nigeria. Adawana State University, Nigeria.
- Fredman, M. (2012). *Solutions for all: Social Sciences*. Gauteng: Macmillan South Africa (Pty) Ltd.
- Fullan, M. (1993). *Changes Forces: Probing the Depths of Educational Reform*. London: The Falmer Press.
- Gikunda, M. G. (2016). *Factors Influencing Teacher Performance in the Implementation of Geography Curriculum In Public Secondary Schools in Imenti South Sub County*. Meru County Kenya: (Doctoral dissertation, University Of Nairobi).
- Gitau, P. (2008). *Mastering PTE education*. Nairobi: Kenya: Kenya Literature Bureau.
- Goldhaber, D. &. (1997). *Evaluating the effects of teacher Teacher Degree Level on Educational Performance*. In W.J Fowler (ed), *Development in School Finance*. Washington D.C: National Centre for Education Statistics.
- Gonzalez, R. D. (2014). *Innovative Learning Geography in Europe: New Challenges for the 21st Century*. Newcastle: Cambridge Scholars Publishing.
- Goodwin, A. S.-M. (2014). What should teacher educators know and be able to do? Perspective from practicing teacher educators. *Journal of Teacher Educators*, 65(2), 284-302.

- Govendor, P. (2010). Back to basic in maths, science: experts underscore reasons for poor matric performances. *Sunday Times*, October 24:4.
- Greydler, M. (1997). *Learning and Instruction: Theory into Practice. (3rd Ed)*. Upper Saddle River, NJ: Prentice-Hall.
- Guskey, T. (2002). Professional development and teacher change. In *Teachers and Teaching: Theory Practice*. 8(3/4):381-391.
- Hazelhurst, E. (2010). Language is a barrier for the majority of people in SA. *The Star*, December 6:16.
- Heffron, S. &. (2012). *Geography for Life: National Geography Standards; Geography Education Standards Project(GENIP)*. National Council for Geographic Education.
- Hlalethwa, B. (2013). *Reading Difficulties Experienced by Learners in the Foundation Phase in Inclusive Schools in Mkapanstad. Unpublished Masters of Education Dissertation*. Pretoria: University of South Africa.
- Howie, S. V. (2008). The Effect of Multilingual Policies on Performance and Progression in Reading Literacy in South African Primary Schools. *Education Research and Evaluation*, 14(6), 551-560.
- Hurry, L. (2015). *Geography Teaching In Southern Africa*. Cape Town: Van Schaik Publishers.
- Incekara, S. (2010). The Place of Geographic Information Systems (GIS) in the New Geography Curriculum of Turkey and Relevant Textbooks: Is GIS Contributing to the Geography Education in Secondary Schools . *Scientific Research and Essays*, 5(6): 551-559.
- Incekara, S. (2012). Do Geographic Information Systems (GIS) move High school Geography Forward in Turkey? A Teacher's Perspective. *Intech Open Science*, 4(5):83-100.
- Innes, L. (2012). South African Schools Geography: Under Pinning the foundation of Geographical Competence. *South African Journal of Geomatics*, 4(1): 92-108.
- Jacobs, M. N. (2011). *Teaching-Learning Dynamics*. Cape Town: Pearson Education.
- K.I.E. (2002). *Primary education syllabus*. Nairobi: Nairobi Kenya Institute of Education.
- Kerski, J. (2003). The implementation and effectiveness of geographic information systems technology and methods in secondary education. *Journal of Geography* , 102,128-137.
- Kim, B. (2001). Social Constructivism. In M. Orey (Ed.). *Emerging Perspectives on Learning, Teaching and Technology*.
- Kojweke, J. (2013). *Factors influencing students' KCSE Performance in Geography in public secondary schools in Migori district, Kenya*. University of Nairobi.
- Koledoye, J. (2011). Effects of Teachers Academic Qualification on Students' Performance at the Secondary level. Retrieved from <http://www.academia.edu>.
- Kus, M. A. (2014). Teacher and Student Thoughts on Effectiveness of Cooperative Learning in Geography Teaching. *Education Research and Reviews*, 9(11):312:319.

- Kyalo, E. O. (2006). Education in Kenya : Towards the paradigm of shift quality. *Journals of Educational Management*, 123:23-33.
- Lako, P. M. (2021). Barriers to Geography Teachers' Engagement with Research in Selected Secondary Schools of Serenje District in Central Zambia. *International Journal of Research and Innovation in Social Sciences*, 72-78.
- Lambert, D. &. (2015). *Teaching geography: A critical introduction*. Routledge.
- Larangeria, R. v. (2016). Map Literacy and Spatial Cognition Challenges for Student Geography Teachers in South Africa. *Perspective in Education*, 34(2):120-138.
- Lincoln, Y. G. (1985). *Naturalistic Inquiry*. Beverly Hill: CA: Sage.
- Liu, C. &. (2005). Constructivism and its Criticisms Examined. *International Education Journal*, 6 (3): 386:399.
- Lungtunan, R. (2012). Effect of teaching methods and students attitude on academic performance . *International forum Journal*,12(2).
- Machintosh, M. (2000). *Photographs, diagrams and maps: Understanding and using them*. Carter ( Ed), *Handbook of Primary Geography*. Sheffield, U.K: The Geographic Association.
- Madiwalar, S. (2012). Factors Affecting Students' Performance and Practice on Map Reading Skills: A Case Study of Selected Secondary Schools in Asela Town, Ethiopia. *Science, Technology and Arts Research Journal*, 1(3):97-105.
- Maduane, L. (2016). *Barriers to Geography Learning and Teaching in Grade 12 in the Limpopo Province*. Unpublished D.Phil. Thesis. Limpopo: University of Limpopo.
- Makewa, L. N. (2012). Usefulness of media resources in English instruction: A case of Adventis secondary schools in Tanzania. *Journal of Educational Pracice*, 3(15),163-172.
- Malasusa, J. (2000). *Factors Influencing Poor Performance in Geography Certificate of Secondary Education Examinations in Tanzania: A Case Study of Dar Es Salaam And Mbeya Regions*.
- Malusu, J. &. (2008). *Distinction education*. Nairobi: Kenya Literature Bureau.
- Maonga, T. (2015). *Influence of Reflective Inquiry-Based Teaching on Public Secondary School Stdents' Performance In Geography Map Work in Kenya*. University of Nairobi.
- Maree, K. (2010). *First Steps in Research*. Pretoria: Van Schaik.
- Martin, F. (2004). Knowledge bases for effective teaching: A case study of one beginning teachers's developmet as a teacher of primary geography. In S. Catling & F. Martin (Eds). *Researching primary geography*. London: Register of Research in Primary Geography.
- Mbugua, Z. K. (2012). "Factors Contributing to Students' Poor Performance in Mattheematics at Kenya Certificate of Secondary Education in Kenya: A case of Baringo Country, Kenya". *American International Journal of Contemporary Research*, Vol.2 No.6.

- McMahon, M. (1997). Social Constructivism and the World Wide Web-A Paradigm for Learning. *Paper presented at the ASCILIFE Conference. Perth, Australia: Perth.*
- Mkhabela, Q. (2005). *Using the Afrocentric Method in Researching Indigenous African Culture. The Qualitative Report.* 1 (10): 178-189.
- Mkhize, S. (2010, May 27). Culture shock for Education. *Sowetan*, p. 12.
- MKRDEC. (2009). *Form four KCSE Examination Analysis.* unpublished report . Migori: Hataro Publisher.
- Mlozi, M. F. (2013). "Factors Influencing Students' Academic Performance in Community and Government Built Secondary Schools in Tanzania: A case of Mbeya Municipality". *International Journal of Science and Technology Vol.2, No.2.*
- Monteith, J. &. (2008). *Teaching and Learning Study Guide for ORLK 511E.* Potchefstroom: North West University, Potchefstroom Campus: The Platinum Press.
- Mosha, M. (2014). Factors Affecting Students' Performance in English Language in Zanzibar Rural and Urban Secondary Schools. *Journal of Education and Practice. Vol.5, No.35.*
- Moss, G. (2017). Central purpose of teaching. *canMedEd-ipea: The CORAL Collection. Concepts as Online Resources for Accelerated Learning.*
- Mtitu, E. A. (2014). *Learner-Centered Teaching in Tanzania: Geography Teachers' Perceptions and Experiences.*
- Mubita, K. K. (2022). University of Zambia Pupil Teachers' Experiences in the Teaching of Geography during School Teaching. *International Journal of Research in Geography (IJRG), 8(1), 1-8.*
- Mubita, K. M. (2023). Teachers and pupils' perspectives on Teaching and Learning of Geography in selected schools of Luapula and Lusaka provinces of Zambia: Benefits, Challenges and Prospects. *International Journal of Social Sciences and Education Research Studies*, P 588-593.
- Mukondeleli, A. (2018). *Teaching of geography mapwork in Grade 12: A case of Nzhelele West Circuit in Vhembe District.* University of Venda.
- Mukwa, C. &. (1988). *General methods.* Nairobi: Nairobi University Press.
- Mullen, J. (2003). *Secondary schools teaching methods.* Cambridge: Harvard University Press.
- Mundede, K. &. (2019). Exploring the concept of 'Equal Opportunity' in the Teaching and Learning Geography in selected Secondary schools of Kabwe District Zambia. *International Journal of Research Geography, 5(4), 23-33.*
- Mundende, K. (2015). Implementation of Geography Field Project in Zambia High Schools: A Survey of Livingstone and Monze Towns of Southern Province. *International Journal of Research in Geography, 1(2), 38-52.*



- Mundende, K. M. (2022). Evaluation of the Administration and Management of peer Teaching at the University of Zambia.
- Mwesiga, F. (2017). *Factors Influencing Students' Poor Performance In Geography Subject In Tanzania: The Case of Community Secondary Schools In Morogoro Municipality*. Mzumbe University.
- Mzinga, W. O. (2021). The Role of Instructional Materials in Learning Geography among Secondary Schools in Busega District, Tanzania. *East African Journal of Education and Social Sciences*, pp.29-36.
- Naxweka, J. (2018). *Selected Namibian Secondary School Geography Teachers' Pedagogical Thinking And Practices: The case of Mapwork*. Rhodes University.
- Nel, A. (2010). *An Integrated learning Programme for the Knysna Montessori School*. Unpublished Doctoral Thesis. Nelson Mandela Metropolitan University.
- Ngaroga, J. (2008). *Primary Teacher Education*. Nairobi: East African Educational Publishers.
- Ngau, P. &. (1986). *Field work and data analysis in Geography*. Nairobi: Nairobi MacMillan Kenya.
- Ng'eno, J. (2015). " *Challenges Facing Effective Use of Geography Instructional Resources by Teachers in Public Secondary Schools, Bureti Sub-County, Kericho County-Kenya*". Unpublished MA Dissertation, Submitted to Kenyatta University.
- Nkosi, B. (2017, January 16). Blame Angie for failures. *Sowetan*, p. 7.
- Nwachukwu, F. (1990). *Teachers Qualification and Areas of Specialization as Predictors of Students Performance in J.S.C. Integrated Science in Ehime-Mbano L.G.A. OF Imo State . . Nsukka: (Unpublished M.Ed Thesis) University of Nigeria*.
- Okwilagwe, E. (2012). Influence of Teacher Factors on Attitude of Geography Teachersto Map Working Nigerian Secondary. *Ife Centre for Psychological Studies/ Services, 20(2):*, 67-72.
- Omor, B. (2014). Determining Methods used in Teaching Geography in Secondary Schools in Rongo District, Kenya. *International Journal of Academic in Progressive Education and Development*, 220-232.
- Ozdemir. (2012). High school students'Attitudes towards Geography Courses (Karabuk Sample-Turkey). *World Applied Sciences Journal, 17,(3):*340-346.
- Ozturk, M. (2013). *How geography teachers deal with the curriculum changes in Turkey*. Turkey: Erciyes University.
- Paraskeva, F. B. (2008). Individual characteristics and computer self-efficacy in secondary education teachers to integrate technology in education practice. *Computers & Education*.
- Plooy-Cilliers, F. D. (2014). *Research Matters*. Cape Town: Juta & Company Ltd.

- Pluddeman, P. (2002). A case study of Xhosa and English bi-literacy in the foundation phase versus English as a medium of instruction. *Perspectives in Education*, 20(1):65-78.
- Pratwat, R. &. (1994). Philosophical Perspectives on Constructivist Views of Learning.
- Rammala, M. (2009). *Factors Contributing towards Poor Performance of Grade 12 Learners at Manoshi and MOKwatedi High Schools. Unpublished Masters of Education Dissertation.* Polokwane: University of the North.
- Ramoupi, N. (2011, September 16 to 22). I don't speak and learn what I like: there has been little real progress towards Africanizing our education system. *Mail & Guardian*, p. 34.
- Reinfried, S. (2001). Curricular change in the teaching of geography in Swiss upper secondary schools: An attempt to develop skills for lifelong learning. *Journal of geography*, 100(6)251-260.
- Rodseth, V. (2002). Developing main language instruction. Development in the Molteno Project-literacy, language and Education development. *Perspectives in Education*, 20(1):97-109.
- Rupia, C. (2007). *Poor Students' Performance in Geography Examinations in Tanzania. An Enquiry into a possible Role of the Teacher methods in Selected Advanced Level Secondary Schools. MA (Education) Dissertation, Submitted to University of Dar es Salaam.*
- Ruthven, K. N. (2005). Incorporating Internet resources into classroom practice: Pedagogical perspectives and strategies of secondary-school subject teachers. *Computer & Education*.
- Seal, E. &. (2001). Using World Wide Web for teaching improvement. *Computers & Education*, 36, 33-40.
- Sewe, P. (2006). *Teaching methodologies.* Teaching New Books:PA.
- Shenton, A. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22:63-75.
- Sheri, R. (2008). *Comprehension instruction. research based best practices, Second Edition (ed).* Cathy Collins Guilford publications.
- Siddu, S. (2012). Factors Affecting Students' Performance and Practice on Map Reading Skills: A case Study of Selected Secondary Schools in Asela Town, Ethiopia. *Science, Technology and Arts Research Journal*, 1(3): 97-105.
- Sofowora, O. &. (2010). An empirical survey of technology application in teaching geography in Nigerian secondary schools. *Ethiopian Journal of Environmental Studies and Management*, 3.(1), 46-54.
- Sonmez, O. &. (2012). Map Skills and present of Republic Elementary School Curricular. *Turkiye Sosyal Aratirmalar Dergisi*, 269-288.
- Strauss, A. (1987). *Qualitative analysis for social scientists.* New York: Sage.

- Tedy,J.L. (2016). *Role of Instructional Materials in Academic Performance in Community Secondary Schools in Rombo District*. Retrieved from: [www.openuniversity.ac.tz](http://www.openuniversity.ac.tz). Retrieved from [www](http://www)
- Thungu, J. (2008). *Mastering PTE*. New York: Oxford University Press.
- Van Heerden, E. (2008). *Addressing the Barrier to Learning in the Helenvale Area of Port Elizabeth: A school Management Perspective.Unpublished Masters Dissertation* . Port Elizabeth: Nelson Mandela Metropolitan University.
- Veloso, T. (2002). Becoming literate in Mozambique-the early stages in Sena (Cisena) and Shangaan (Xichangana). *perspectives in Education*, 20(1):12-24.
- Waka, M. &. (2008). Evaluation of the revised 8-4-4 primary and secondary school curriculum. *Official Journal of the Kenya Institute of Education*, 1(2):31-32.
- Wiid, J. &. (2013). *Marketing Research. (2nd ed)*. Cape Town: Juta & Company.
- Wilmot, D. &. (2016). South African Teachers' Perceptions of the Primary Geography Curriculum. *Review of International Geographical Education Online*, 5 (2):137-150.
- Yahaya, A. D. (2021). The impact of teaching methods on the performance of geography students in some selected public secondary schools in Zaria local government area, Kaduna State, Nigeria. *Journal of Social, Humanity, and Education (JSHE)*, 143-155.
- Yap, L. T. (2008). An Assessment of the use of Geographic information Systems (GIS) in Teaching Geography in Singapore Schools. *J.Geo*, 107(2): 52-60.
- Zhang, y. &. (2009). *Qualitative analysis of content. In BM Wildemuth (ed). Applications of social research methods to questions in information and library science*. Westport, CT: Libraries Unlimited.

## **APPENDICES**

### **Appendix A: Learners' interview schedule**

1. What sections of map work do you find most difficult when learning?
2. How do you and your peers deal with these problems?
3. How does your teacher assist you with the problems?
4. Do your parents help you with your schoolwork?
5. If yes, how often?
6. What do you think can be done to solve this problem?

### **Appendix B: Teachers' interview schedule**

1. What are challenges that you come across when teaching Geography?
2. What sections of Geography do you find difficult to teach?
3. How do you deal with these problems?
4. How do you deal with learners with difficulties in understanding Geography map work?
5. Do you get all the necessary support that you need from the school and the HOD?
6. What do you think can be done to solve this problem?

### **Appendix C: HODs interview schedule**

1. How do you manage teaching and learning?
2. How often do you monitor the progress of teachers and learners?
3. What are the most challenging sections encountered by teachers and learners in Geography map work?
4. How do you assist teachers and learners with these problems?
5. In terms of resources, do you receive the support you need from your school and the Department of Education?
6. What do you think can be done to solve this problem?

## Appendix D: Observation Schedule

The following will be observed:

|   | YES | NO |
|---|-----|----|
| 1. learners show interest in the subject<br>Geography   |     |    |
| 2. teachers show positive attitude towards<br>Geography |     |    |

## Appendix E: Assent Form

### Assent form for participation in the research

Your child is welcome to take part in a study being done by Rakgoale Mabatho Sandra. The goal of the study is to examine challenges related to the teaching and learning of Geography in secondary schools in Mankweng Circuit, Limpopo Province, South Africa. The researcher assures participants that they will receive the utmost privacy protection. The participants will not be made public in any publications that come out of this study. It is optional to take part in the study. The participant is free to decide at any time whether or not to participate.

### ASSENT

I agree to participate in the study because I have read and understood the assent form.

Name of participant: \_\_\_\_\_

Signature of the participant: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix F: Teachers' Consent Letter

DEPARTMENT OF GEOGRAPHY

Department of Geography

██████████ High School

Private Bag x██████████

Boyne

25 August 2021

Dear Sir/ Madam

I would appreciate your permission to use your institution's teachers as research participants. The goal of the research is to explore challenges associated with the teaching and learning of Geography Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province, South Africa.

The teacher is required to participate in the interview process and offer any necessary responses. The teacher's engagement is entirely optional, and she or he is free to leave at any time. The teacher's reaction will be kept completely private, and the cassettes used to capture it will be stored in a technological folder that is inaccessible.

Thank you for allowing your teacher to participate in the study.

Yours faithfully

Rakgoale MS

.....

## **Appendix G: Teachers' Consent Letter**

DEPARTMENT OF GEOGRAPHY

Department of Geography

██████████ High School

Private Bag x [REDACTED]

SOVENGA

0727

25 August 2021

Dear Sir/ Madam

I would appreciate your permission to use your institution's teachers as research participants. The goal of the research is to explore challenges associated with the teaching and learning of Geography Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province, South Africa.

The teacher is required to participate in the interview process and offer any necessary responses. The teacher's engagement is entirely optional, and she or he is free to leave at any time. The teacher's reaction will be kept completely private, and the cassettes used to capture it will be stored in a technological folder that is inaccessible.

Thank you for allowing your teacher to participate in the study.

Yours faithfully

Rakgoale MS

.....

**Appendix H: Teachers' Consent Letter**

DEPARTMENT OF GEOGRAPHY

Department of Geography

[REDACTED] Sec School

Private Bag x [REDACTED]

SOVENGA

0727

25 August 2021

Dear Sir/ Madam

I would appreciate your permission to use your institution's teachers as research participants. The goal of the research is to explore challenges associated with the teaching and learning of Geography Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province, South Africa.

The teacher is required to participate in the interview process and offer any necessary responses. The teacher's engagement is entirely optional, and she or he is free to leave at any time. The teacher's reaction will be kept completely private, and the cassettes used to capture it will be stored in a technological folder that is inaccessible.

Thank you for allowing your teacher to participate in the study.

Yours faithfully

Rakgoale MS

.....



**Appendix I: Request Form for Parents**

**CONSENT LETTER: PARENTS**

Department of Curriculum Studies

University of Limpopo

Private Bag x 1106

SOVENGA

0727

25 August 2021

Dear Parent

We appreciate you letting your kid participate in the research. The research project is solely intellectual in nature. The goal of the research is to explore challenges associated with the teaching and learning of Geography Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province, South Africa.

The youngster may opt out of the study at any moment, and participation in it is entirely voluntary. On the designated dates, the child will be required to take part in an unstructured individual interview. If you feel free to ask any questions about the procedure, I will be happy to answer them. The child's reaction will be kept completely private. I would appreciate it if you let the kid take part in the research.

Yours faithfully

Rakgoale MS

.....

**Appendix J: permission letter to the Department of Education**

Department of Education

University of Limpopo

Private Bag x1106

SOVENGA

0727

25 August 2021

The Circuit Manager

Mankweng Circuit

Private Bag x1108

Sovenga

0727

Dear Sir/Madam

**RE: PERMISSION TO CONDUCT RESEARCH IN THREE SECONDARY SCHOOLS IN MANKWENG CIRCUIT**

My name is Mabatho Rakgoale. I am masters' candidate in the Department of Education Studies at the University of Limpopo. The goal of the research is to explore challenges associated with the teaching and learning of Geography Grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province, South Africa.

I hereby request authorisation to do research at [REDACTED] High, [REDACTED] Secondary and [REDACTED] Senior Secondary Schools, all of which are located in your circuit. The researcher will maintain anonymity and protect the identities of participants in this study. The fact that the study is entirely voluntary and that participants might choose not to participate will be made clear to them.

Individual interviews with teachers, learners and HODs will be used to gather data.

Sincerely

**Appendix K: consent form to be signed by participant.**

I.....hereby consent to engage in the masters research project in Mankweng Circuit that focuses on the issues relating to teaching and learning of Grade 12 Geography map work.

My understanding of the purpose of the study is clear. I acknowledge and agree that I am participating voluntarily and was not forced to do so. I am conscious of the fact that my participation in the study is entirely voluntary and that I have the option to end it at any moment. I am aware that I will not be compensated for taking part in the study because it is not intended for my personal gain. I agree that my personal information will be kept private and that the information I supply will be used exclusively for educational reasons.

Signature.....

Date.....

## Appendix L: Ethical clearance from the University of Limpopo



**University of Limpopo**  
Department of Research Administration and Development  
Private Bag X1106, Sovenga, 0727, South Africa  
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: anastasia.ngobe@ul.ac.za

**TURFLOOP RESEARCH ETHICS COMMITTEE**  
**ETHICS CLEARANCE CERTIFICATE**

**MEETING:** 29 November 2022

**PROJECT NUMBER:** TREC/642/2022: PG

**PROJECT:**

**Title:** Challenges of teaching and learning Map work in Grade 12: A case of Mankweng Circuit in Limpopo Province.

**Researcher:** MS Rakgoale

**Supervisor/s:** Dr T Malahlela

**Co-Supervisor/s:** N/A

**School:** Education

**Degree:** Master of Education (Curriculum studies)



**PROF D MAPOSA**  
**CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE**

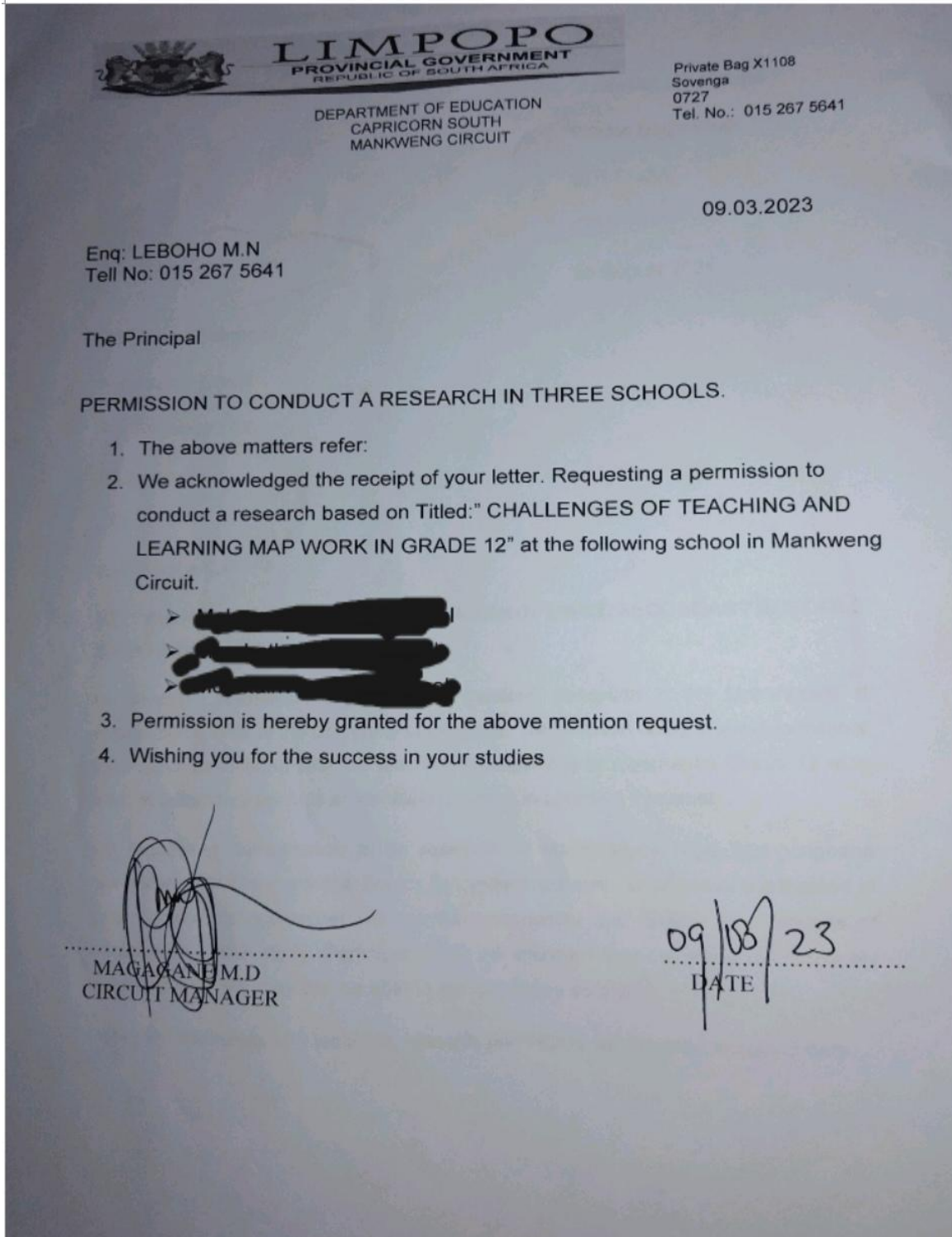
The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

**Note:**

- i) This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.
- ii) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.
- iii) PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

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**Appendix M: permission letter from the department of Education**





507 Caledon Village, Cell +27794848449, Email: kubayjoe@gmail.com

**07 April 2023**

Dear Sir/Madam

**SUBJECT: EDITING OF DISSERTATION**

This is to certify that the dissertation entitled 'Challenges of teaching and learning Map work in Grade 12: a case of Mankweng Circuit in Limpopo Province, South Africa' by M.S. Rakgoale has been edited, and that unless further tampered with, I am content with the quality of the dissertation in terms of its adherence to editorial principles of consistency, cohesion, clarity of thought and precision.

Kind regards

A handwritten signature in black ink, appearing to read "SJ Kubayi", enclosed within a hand-drawn oval.

Prof SJ Kubayi (DLitt et Phil)