PERFORMANCE OF GRADE 12 LEARNERS IN PHYSICAL SCIENCES SUBJECT WITHIN SEKGOSESE EAST CIRCUIT IN MOPANI DISTRICT

BY

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DECLARATION

I, Ratshivhadelo Thivhilaeli Alex hereby declare that the dissertation for the Masters in Curriculum studies (MEDCS) degree at the University of Venda, hereby submitted by me, has not been submitted previously for a degree at this or any other university, that it is my own work in design and in execution, and that all reference material contained therein has been dully acknowledged.

Signature T. A. Rat Date 02 - Oct - 2010

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Special thanks goes to my wife Mashudu, my two daughters Mukhethwa and Funanani and my son Aluwani for their support as, I could not spend most times with them during my studies.

DEDICATION

I dedicate this work to all Physical Sciences teachers in Mopani and Vhembe district.

ABSTRACT

The purpose of the study is to explore the performance of Physical Sciences subject in the Sekgosese East circuit. The researcher consulted both local and international literature to support the study. The researcher made use of the Quantitative research design. Simple Random Sampling was used to reduce the population into a manageable sample. Data was collected through the use of research questionnaires and was analyse statistically in the form of tables and the variables were reflected in the form of percentages. Findings of research revealed the serious shortage of laboratories and lack of suitable qualification on the side of human resource. In conclusion, the researcher indicated what the reader may learn from this research and how helpful the research could be to other scholars. The researcher finalized by recommending appropriate strategies that could be used to bring about good performance in Gr.12 Physical Sciences

TABLE OF CONTENTS

CHAPTER 5:SUMMARY, FINDINGS,CONCLUSION AND RECCOMENDATIONS **129**

CHAPTER ONE: ORIENTATION

1.1 BACKGROUND TO THE RESEARCH STUDY

Limpopo Department of Education (LDoE) aims at producing good results in scarce related subjects like Physical Sciences in Grade 12(Gr12). This is a challenge to all circuits within the Province, Sekgosese East Circuit with no exception. Consequently these circuits are unable to produce students who will be able to serve in scares related jobs like Medicine, Engineering, Agriculture, Technology and others. Pass rate of students with quality Grade 12 Physical Sciences results seems to be very low and as such, the biggest challenge facing the circuit is to teach Physical Sciences effectively and bring about good results. The statistics in table 1.1 below reflects the fluctuating status for Sekgosese East Circuit Physical Sciences performance.

Year	Grade	No. wrote	No. Pass	% Pass	No. Fail	% Fail
2005	12	154	55	35.7	99	64.3
2006	12	180	58	32.2	122	67.8
2007	12	199	74	37.2	125	62.8
2008	12	220	90	40.9	130	59.0
2009	12	340	92	27.1	248	72.9

TABLE 1.1 TABLE OF PERFORMANCE INDICATION (adopted from Sekgosese East Circuit data of Gr.12 results of 2005 up to 2009)

Factors influencing low pass rate could attribute to a number of issues such as human resources, physical resources, and material resources, role of Subject Advisors, teachers / learners' motivation, leadership and curriculum management.

Shortage of qualified Physical Sciences teachers in secondary schools is caused by one factor or another. Unavailability of qualified teachers is in the lime light. Most teachers are leaving teaching profession for better paying jobs in other sectors. This was echoed by the former Limpopo Province MEC in charge of the Department of Education who confirmed of the crisis and said that he was informed by secondary schools principals who are facing serious difficulty in filling in Physical Sciences teaching vacancies. Mpumalanga MEC Education also confirmed the situation as it is similarly taking place in Mpumalanga Province. (Sunday Times, 30 September 2007:07)

Closing down of Colleges of Education left universities with a mammoth task of training and producing the expected number of Physical Sciences teachers. Producing a large number of Physical Sciences teachers by the universities seems to be very difficult task since few students enroll for a Degree or Diploma in Science Education.

Segal and Kotecha (1993:04) indicated that South African students do not qualify for entrance into Science based courses on the basis of low Gr.12 results. Other contributing factor is that Physical Sciences students who pass Gr.12 with good symbols are not willing to train as teachers because of poor remuneration. Because of poor remuneration, Physical Sciences teachers leave teaching profession and opt for better paying careers. Rutherford & Watson (1990:10) state that most Gr.12 students score relatively low or below aggregate whereas most universities prefer C-aggregate for admission.

There is a serious problem because of the unavailability of suitable qualified teachers who could teach Physical Sciences effectively. This problem is also eminent in other four provinces namely North West, Kwazulu-Natal, Eastern Cape and Northern Cape. Suitable qualifications for teachers to offer Physical Sciences in Grade 12 are at least three years qualifications in Secondary Teaching Diploma (STD) or an Advance Certificate in Education (ACE) in Physical Sciences (Sunday Times, 30 September 2008).

According to the African National Congress (1994:52), some teachers are teaching Gr.12 Physical Sciences with Primary Teachers Diplomas and Certificates.

Worse still, research findings by Sirestarajah (1994:14) indicate that most Physical Sciences teachers offer Physical Sciences with only STD 10/grade 12 qualifications. Sirestarajah (1991:21) further pointed out that some teachers fail to clarify some of the scientific concepts as they never got an opportunity to know and command those concepts.

Bradley, Brand and Mark well (1998:21) pointed out that poor teacher qualifications make students lose interest in Physical Sciences. Department of Education (DoE) makes provision for free bursaries for Physical Sciences teachers to upgrade their qualifications, but still most Physical Sciences teachers are reluctant to enroll with the universities (www.capegate.gov.za).

The Education Department organises workshops in the form of In-Service training for Physical Sciences teachers, still this does not give a positive effect still time allocated for workshops is insufficient and is usually done in the afternoons and week-ends (www.Capegate.gov.za).

Shortages of relevant material resources such as books, journals and technocratic equipments like overhead projectors, microscopes and other apparatus also give a serious setback. Unavailability of material resources makes teaching very complicated and very difficult since learners are sharing the few resources they have.

The approach that teachers use when teaching Physical Sciences is also a cause for concern as it is characterized by former traditional methods of memorisation and reproduction. As contrasted with the new method of outcome- based, Physical Sciences is more about doing than listening what the teacher say and memorise. Within this context, co-operative method which is characterised by group work, discussion, problem solving and decision making is rarely applied whereby learners have chance to explore and solve problems related to their studies. Barlia & Beeth (1999:56) confirmed that motivation in learning Science, teachers' teaching style and students' way of learning through practice improve student performance

The rural set up is also a contributing factor since some of the areas in Sekgosese East Circuit do not have electric power supply. Availability of electricity simplifies teaching and learning activities and learners may be able to study during the evenings. Teachers and learners can make use of electrical equipments such as computers, over-head projectors and others.

Poverty also plays a negative role in motivating learners to enroll for Physical Sciences since parents and learners consider it to be expensive. Consequently parents are unable to pay for their children's Saturday lessons or to buy their children extra text books for references, and as such, they depend on one text book or solely on teachers' notes. Most students find it difficult to go further with their studies as they run out of funds and resort to dropping out from the secondary schools.

1.2 STATEMENT OF THE PROBLEM

There is a high Physical Sciences failure rate in Sekgosese East Circuit and the researcher realised that the unavailability of laboratories brings negative contribution since learners are taught without doing practical works and scientific investigations. Since Physical Sciences is not taught practically through experiments, learners are unable to visualise the content theoretically. Lack of laboratory and equipments results in lack of experiential and slow learning.

Inability of Physical Sciences teachers to facilitate lessons competently due to unpreparedness results in lack of subject mastering and dishonouring of lessons. Overburdened of qualified Physical Sciences teachers also attribute to poor performance.

Lack of career guidance and motivation influence learners not to have vision of their future prospects. Lack of career guidance and parental support has a negative effect towards learner's performance in Physical Sciences. Lack of learners' readiness and motivation in Physical Sciences also contributes towards poor performance in Gr.12 Physical Sciences.

1.3 RESEARCH QUESTIONS

Research questions are as follows:

- Why are there few students doing Physical Sciences lessons in the Circuit?
- Why is Physical Sciences pass rate so low in the Sekgosese East Circuit?
- What strategies are currently on place to improve Physical Sciences results?

1.4 AIMS OF THE STUDY

The followings are the aims of the study:-

- To investigate why few learners are doing Gr.12 Physical Sciences.
- To explore why performance of physical Sciences subject in Sekgosese East Circuit is low.
- To examine through literature what strategies is in use to improve performance of Physical Sciences.

1.5 SIGNIFICANCE OF THE STUDY

This dissertation will contribute towards scholarship as it will be a useful source for the University of Venda library where it could be used for reference purposes. Prospective researchers and students in the field of Science Education may advance and develop on what the current researcher has investigated.

1.6 PRELIMINERY LITERATURE REVIEW

Literature was available to support the study, for example Hudson (1993) indicated that there is a shortage of laboratories which is increasing failure rate in South African Physical Sciences classes Shutter & Shooter (2003) also indicated that traditional white schools were well resourced compared to black schools.

1.7 RESEARCH DESIGN AND METHODDLOGY

The following were discussed in research design and methodology:-

1.7.1 RESEARCH DESIGN

Researcher employed Quantitative research approach. Researcher used this approach because of the followings: - It allowed the researcher to plan the course of the investigation precisely and unambiguously before it was carried out. The method was more convenient since it reduces influences from the researcher and it works best with statistical data (Rudenstam & Newton, 1992:24).

1.7.2 RESEARCH METHODOLOGY

The followings were discussed in research methodology:-

1.7.2.1 POPULATION

Population is defined by Goddard & Stuart (2001:3) as any group which is the subject of research interest. The same was defined by Krathworls (1988:56) and Straus & Myburg (2000:69) as a group from which the study's results may be expected. Nachmias & Nachmias (1997:179) also added that population is the entire set of relevant units of analysis. Therefore population in this research comprised of 16 high schools principals within Sekgosese East Circuit, 16physical Sciences teachers, 400 learners who were doing physical Sciences in 2010 and 1 Physical Sciences Subject Advisor.

1.7.2.2 SAMPLING AND SAMPLE

Researcher employed Systematic Sampling Method. To reduce the number of principals and teachers researcher used multiples of 2. Names of schools were written on the piece of paper in their alphabetical arrangements. Numbers 1-16 were written against names of schools and schools that received numbers in multiples of 2 were sampled for data collection. 400 learners were reduced by applying the multiples of 25. There is only 1 Physical Sciences Subject Advisor in the circuit and as such he was automatically sampled. Sampling of the population brought the following sample: - 8 principals, 8 teachers, 16 learners and 1 Subject Advisor. The sample was therefore comprised of 33 respondents (Nachmias & Nachmias: 1997:179).

1.7.2.3 INSTRUMENT OF RESEARCH

For data collecting purpose, researcher used Semi - Structured questionnaires. Researcher designed questionnaires in a simple language, short and straight to the point to make sure that they were simple to understand. Permission to conduct research in schools was granted by the circuit manager. Questionnaires were personally distributed to sampled schools for respondents to complete. Researcher guided respondents on how to complete the questionnaires thereafter they were completed and collected by the researcher upon completion (Behr: 1988:12).

1.7.2.40 DATA ANALYSIS AND INTERPRETATIONS

To analyse data, researcher make use of scientific appliances like calculators and computers. Data was presented statistically in tables in which frequencies of responses were presented on percentages (%).

1.8 VALIDITY

Validity of the instrument refers to the extent in which instrument measures what the researcher expect it to measure. Instrument is said to be valid when it measures what it is meant for. In this study, the instrument was tested to reassure its validity and it met the required criteria. Researcher discussed the instrument with his supervisor to identify shortfalls that might be available. Language used was simple for respondents to understand without difficulties (Garrat et al: 1933:1140 -1144).

1.9 RELIABILITY

Reliability refers to accuracy, consistency and stability of data-collecting instrument. Instrument is said to be reliable when it can brings same results repeatedly and under constant conditions. In order to ensure reliability of the instrument, researcher gave questionnaires to the principals, teachers and learners who were not part of the sample to fill the questionnaires and in all instances, results appear the same in all subgroups (Silverman: 1993:145).

1.10 ETHICAL CONSIDERATION

The researcher made sure that rights and decisions of other participants were considered. In order to achieve this, researcher adhered to the following codes:-

Respondents were informed about the purpose of the research. It was also explained to respondents on how the information will be used. Researcher explained the nature of the instrument to respondents. Respondents were guided on how to complete the questionnaires before data collection commenced.

Participants' privacy was respected and no participants' private life was exposed and this was achieved by making questionnaires anonymous (Grinnel1993:20), (Burn and Groove: 1993:54), (Strauss & Myburg: 2001:61) and (Burns & Grooves: 1993:54).

1.11 DELIMITATIONS OF THE STUDY

The study focused on the secondary schools that fall within Sekgosese East Circuits of the Mopani District in Limpopo Province.

1.12 DEFINITION OF CONCEPT

In this research, the following concepts were defined:-

1.12.1 PHYSICAL SCIENCES

According to the DoE (2005:07), Physical Sciences is a subject in the FET band (Grade 10-12) which deals with society's needs to understand how environment works. Physical Sciences focuses on the investigations of Physical and Chemical phenomena through scientific inquiries. Physical Sciences comprise two sections, namely: - Physics and Chemistry.

1.12.2 MOPANI DISTRICT

Mopani is one of the five districts in the Limpopo Province. The district is situated on the South Easterly side of Vhembe district, Eastern Side of Capricorn district and the North Easterly side of Sekhukhune district. The area is dominantly occupied by the Tsonga speaking people and *Sepedi* speaking people.

The district offices are situated in Giyani. The district name *"Mopani"* was adopted from Mopani tree on which Mopani worms *(Mashonzha* in Tshivenda or *Mashotja* in Sepedi) feed. *Mashonzha* serve as relish to many people in the region and nearby regions, and they are used as a means of commodity.

1.12.3 SEKGOSESE EAST CIRCUIT

Sekgosese East Circuit is one of the school circuits in Mopani District. Sekgosese East Circuit name was derived from the Mountain found *at* Thakgalane (Ga Pheeha).It is alleged that the mountain was named Sekgosese during the *Mapono* wars.

The name Sekgosese was adopted to identify the circuits: Sekgosese Central, North, East and West. Sekgosese East was then demarcated to Greater Letaba Municipality under Mopani District. In this study, Sekgosese East Circuit is the circuit in the Mopani district of the Limpopo province where the research study was conducted.

1.13 CHAPTER DIVISIONS

Chapters of this research are divided as follows:-

CHAPTER ONE

Chapter one comprised of background to the research problem, problem statement, clarifications of concept research questions, aims of the research, significance of the study, delimitation, research methodology, research design and delineation of chapters.

CHAPTER TWO

Chapter two focused on literature review whereby local and international literatures were consulted.

CHAPTER THREE

Chapter three comprised of research design and methodology. In research methodology, researcher detailed population, sampling, research instrument, data analysis and interpretation, validity, reliability and ethical considerations.

CHAPTER FOUR

Chapter four focused on data analysis and interpretation.

CHAPTER FIVE

Chapter five comprised of the summary of the study, discussions of the findings, conclusions, recommendations and the summary.

1.14 SUMMARY

In chapter one researcher detailed the background of the study, problem statement, research questions, aims of the study, significant of the study, preliminary literature review, Research design and methodology, delimitation of the study, definition of concepts, validity, reliability of the instrument, ethical consideration and chapters division.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter covers the literature the researcher had consulted to support the studies. The existing literature focused on the following areas: The importance of Physical Sciences, Factors that contribute to the good performance of Gr.12 Physical Sciences learners. Physical resources, material resources, teacher qualifications and student motivation.

2.2 THE CONCERPT PHYSICAL SCIENCES

As illustrated in 1.9.1, Physical Sciences is a subject offered in the FET band (Grades 10-12) which helps the society to understand environment and how the environment works. Physical Sciences focus on the investigations of Physical and Chemical phenomena through scientific inquiries. It two sections sciences namely: Physics and Chemistry.

Physical Sciences underpin most of technologies that we take for granted. For example Physical Sciences form a basis of Science and technology which is used in the factories in the manufacturing of different products, such as the production of clothes and processing of food that we eat. Science is also important in medication and medical diagnosis and treatment (Sirestarajah: 1994:02).

Khan & Rolinick (1994:270) stressed this by saying that Science plays an important role in all aspects of life, for example in Biology, Micro-organisms are studied in order that we understand water related diseases and water purifications demand knowledge and application of Chemistry. Water distribution needs understanding of Physics and Technology.

Klopfer & Champagne (1990:135) describe Physical Sciences as being significant in bringing literacy in the fields of Science. Science is expressed as the knowledge gained through experiences and that Science attempt as much as possible to equip people in various technological and practical science skills.

The White Paper on Education (1995/1996) singled out Physical Sciences as a significant school subject, and emphasised that more students leave school being proficient in Physical Sciences.

The White Paper on Education (1995-1996) continued and indicated that Physical Sciences is a cornerstone for economic, political and social reforms in every country. Production of Science students in secondary schools boosts the country by supplying more skilled local human resources, and this brings a rand back in our pocket. Technological developments which are necessary for the economic and social well being of the people (Department of Education: 2005:08).

2.3. REQUIREMENTS TO EFFECT PERFOMANCE IN PHYSICAL SCIENCES

The followings were discussed as the basics to effect performance in Physical Sciences:-Physical resources, material resources and human resources.

2.3.1 PHYSICAL RESOURCES.

Classroom accommodation and laboratories were discussed as the basic Physical Sciences resources

2.3.1.1 CLASSROOM ACCOMODATIONS.

Cawood & Gibbon (1981:261) demonstrated the importance of classroom by putting it clear that the availability of classrooms make teaching and learning very smooth. They continued to indicate that the availability of classrooms makes it simple for the teaching of Physical Sciences in a well spaced class.

Cawood and Gibbon(1981:261) went further to state that Physical Sciences requires attention, concentration and effective learners' involvement in each and every lesson, well disciplined and spaced classrooms are suitable for effective teaching and learning .

2.3.1.2 LABORATORIES

Sirestarajah (1994: 33) indicated the importance of laboratories at school. When laboratories are present, Physical Sciences is not taught and learned theoretically and drilling cram work. Laboratories fully engage teachers and learners in effective and meaningful teaching and learning. Because of the laboratories and laboratory equipments make it simple for teachers and learners to teach and to learn Physical Sciences with ease through experiments and scientific investigation.

Tobin, Kahle & Frazer (1990: 227) also add the fuel in fire when stating that laboratories and laboratory equipments reduce failure rate as learners could deeply engage them in scientific investigation and sound debates in the laboratory. They went further to indicate that practical works in secondary schools are done in order that chemical and physical phenomenon should be real.

Yearly (1991:18) & Arnot, Kubeka, Rice & Hall(1997:14) supported the latter that laboratories are one Physical resource that are a requirement for Physical Sciences teaching and learning and that Scientific Knowledge could be gained through experiments. For learners to acquire Scientific Knowledge and Skills, they need to have a direct contact with objects of knowledge through experimentations and observations.

Importance of practical works and experiments in the laboratory is also illustrated by Hudson (1993:38) when stating that experiments and hand on practical works in high schools Physical Sciences class is done to make Physical and Chemical phenomenon more real through experiments of which without practical works, learning of Physical Sciences at theoretical abstract way and cram work.

2.3.2 MATERIAL RESOURCES

Learning materials refer to any learning aid that can be used teaching aid that can be used in the facilitation of lesson. These include amongst others a lot of things ranging from chalkboard, chalks, text books, Microscopes overhead projectors.Learning materials are a precious requirement in as far as teaching of Physical Sciences is concerned. In his study Lumsdem (1989:15) indicated the value of using relevant Physical Sciences learning materials like textbooks as imperative for teaching and learning process. Text books are the most required resources since it promote textbooks methods of teaching in which learners are encouraged to use as a source of getting information.

Lumsdem (1989:54) also added this by stating that under-resourced class is impersonal overpowering and results in high failure rate and also indicated how effective teachers teach when working in well resourced classes. Teachers are stress free when teaching learners with text books that are relevant and up to date.

Well resourced class with suitable text books is conducive for positive facilitation of teaching and learning programme. Learners with text books could finish the syllabus in a fast pace. With the availability of text books and other teacher/learners support material, learners can write home activities, class activities and study at home and study. Text book methods help the teacher to supply learners with new information which is up to date (Yearly: 1991:18).

2.3.3 HUMAN RESOURCE

Teacher qualifications and the level of teacher development in a subject seem to play a significant role in as far as learners performance in Physical Sciences is concern. Employment Education Act 76 of 1998 (EEA) defines approved teacher qualification as Degrees, Diplomas, Certificate or other qualifications recognised by the minister as a qualification for appointment as a teacher.

In their approach to improve Science and Technology teaching at schools, The African National Congress (ANC): 1994:254) stated that teacher qualifications are the basic requirements to take South Africa into a self reliance country. The ANC (1994:254) stated that teachers are the most precious requirement in teaching and learning.

The ANC (1994:53) further observed that teacher's relevant qualifications produce a good quality prepared students who may pursue further studies in Science and technological trainings to fill human resources gap in line with Science and technological demands.

Teachers, competency raise learners interest in the subject and motivate learners to investigate more in Physical and Chemical phenomenon and it is for that purpose that Brandly et al (1998:21) stated that teacher's knowledge and Qualifications in Physical Sciences raise learner's interest in Physical Sciences. He continued to indicate that some Physical Sciences teachers with knowledge could clarify scientific concepts in well clear and understandable way without any disturbance.

Watts & Bentley (1989:162) also stated that suitable human resources work effectively and bring positive results. Monobe (1995:39) also add by indicating that even if Physical Sciences is said to be difficult, the availability of more of qualified teachers makes it simpler for teachers to teach effectively and improve the performance.

2.4 STRATEGIES TO IMPROVE GR.12 PHYSICAL SCIENCES LEARNERS PERFOMANCE

The government of South Africa is committed to heal divisions like unequal distribution of education in a country. (Garrat, Ruta, Buckingham and Russel (1993:1140 -1144).The South African Constitution of 1996 section 29(1) (b) provides that everyone has the right to further education. The state should therefore make provisions for under-qualified Science teachers who are willing to further their studies.

The government is willing to improve the situation in South African education system. This is clearly defined in the South African Constitution preamble when stating that "We adopt this constitution to heal the division of the past and/or establish a society based on democratic values, social justice and fundamental human rights (South African Constitution 1996:01).

The South African Government and the Department of Education together with the High Education Institutions, Universities, Technickons and Technical Colleges are engaged in improving the situation of Physical Sciences in secondary schools. The government is giving a positive support extending from financial assistance, improving infrastructures and teachers training programmes.

Zaaiman (1998) indicated that the University of the North introduced a Science Foundation year to address the low number of university enrolling students and high failure rate in the Unin-based Science faculties. The Unin-Foundation Year (UNIFY) was aimed at preparing disadvantage South African students for admission to Science based facilities and enhances their chances of successfully completing a BSC degree programme.

2.4.1 ESTABLISHMENT OF THE *DINALEDI* SCHOOLS

Dinaledi concept is an initiative arising from the National Strategy on Mathematics, Physical Sciences and Technology Education to have schools of excellence for mathematics and Physical Sciences established. That was with the aim to achieve the following objectives:

- To increase the number of learners studying Mathematics and Physical Sciences in Grades 10 -12.
- To increase the number of learners in Mathematics and Physical Sciences and particularly disadvantaged learners.
- To increase the pass rate and achievement in Mathematics and Physical Sciences in Grades 10 -12
- To develops the capacity of the Mathematics and Physical Sciences teachers. *Dinaledi* schools are adopted by the National Department of Education in order to improve them with physical, material and human resources in order to improve the performance of Mathematics and Physical Sciences in the country (www.thutong.gov.za).
- In the Provincial report of the Department of Education the former Limpopo Province MEC indicated of education that in trying to maintain and improve the Province's record of being star performers in the production of Sciences students' country wide.

The department has the following number of schools of excellence in 2010:

- The national *Dinaledi* schools were 51.
- The provincial schools were 3 in the Limpopo province.
- Dinaledi reserve schools were 20 (www.thutong.gov.za)

The Department of Education (2005-2006:12) went further to indicate that to provide resources to support Dinaledi Schools. National Minister of Education has allocated R 150 000.00 for equipments to each Dinaledi School. The Provincial Department of Education also allocated a further amount of R 80 000.00 for the purchasing of Mobile Science kits and laboratory equipments.

2.4.2 THE "NO FEES SCHOOL POLICY" (QUINTILE SYSTEM)

No fee policy is a policy adopted by the South African government which is aimed at helping learners in underprivileged areas. It is also known as *Quintile system*. *Quintile system* is a state funding system in which schools are divided into five categories according to the poverty levels of their municipalities. This is a form of social grant in school level. Quintile levels range from quintile 1(the richest) up through Quintile 5(the poorest). Though Quintile 5 is obtainable in urban areas, they common in rural areas the *Quintiles* are based on the on the quintile level of various municipalities.

According to the arrangements of quintiles, schools falling within the same municipal wards would generally fall within the same Quintile as the poverty level of the municipal ward (DoE: 2005-2006:11).Schools in Quintile 3 to 5 are exempted from paying school fees but all Quintile levels get the supply of text books and stationery. *Quintiles* 3 to 5 are also covered with a feeding scheme in which learners are having the provision of food at their schools. This is a step forward because can spend most of their time at schools studying and writing homework (www.South Africa.info.edufacts.htm).

2.4.3 PHYSICAL SCIENCES TEACHER DEVELOPMENT PROGRAMMES

Physical Sciences teacher development programmes in this study involves:-Bursaries for fulltime Physical Sciences teacher students, in-service trainings, recruiting foreign nationals to fill Physical Sciences vacancies and recruiting resign teachers back to the system.

2.4.3.1 BURSARIES FOR FULL TIME PHYSICAL SCIENCES TEACHERS

There are a number of programmes that are planned and organized by the National Department of education and the provincial department of Education to make sure that students who are interested in joining the teaching profession are getting financial assistance. Bursaries for full- time pre-service student were made available in the national and provincial levels. *Funzalushaka* teacher bursary is one of those bursaries. This is a multiyear's programme that promotes teaching of scarce subjects like Maths, Physical Sciences, Commerce and languages (www.funzalushaka.doe.gov.za)

Department is paying full cost bursaries to eligible candidates. The primary purpose of this is to try to balance the gap between supply and demand on scarce and critical skills and which cannot be addressed. There are currently 298 learners enrolled for a bachelor of Education with specialization in Maths Science Technology and Commerce.

The programme is running in three institutions of higher learning which are: - Wits, Limpopo and Venda Universities (www.funzalushaka.doe.gov.za).According to the Department of Education (2006-2007:21).Limpopo Department of Education offered bursaries worth R 700 Million this year to 4089 teachers mostly from the rural who want to teach Maths and Science.

2.4.3.2 IN-SERVICE TRAINING

Teacher training is also taking places in the form of the In-service Training (Insert) in both Universities of Limpopo Province which are the University of Venda and the University of Limpopo. Sirestarajah (1994:22) supported this by saying that In-Service Training (Insert) enables Science teachers to perform practical work in their own classrooms even if they are failing to do experiments due to the lack of equipments at their schools.

The Limpopo Province Department of Education is managing bursaries for educators who are upgrading on critical and scarce related skills on part time basis. Part time bursaries were awarded to eligible candidates in the following ways: In 2007-577, 2008 -2234, 2009 – 3679 and in 2010 an intake of 3000 candidates was done. This seems to be an effective measure. Through In-Service Training, teachers have the opportunity to work as groups on apparatus and to discuss the difficulties they face and gain more knowledge from simple home-made equipments and get clarifications on difficult sections (Sirestarajah: 1994:22).

2.4.4 RECRUITING FOREIGN NATIONALS TO FILL VACANT POSTS IN SCIENCE TEACHING

The government and the department of education are committed to solve the crisis. The government together with the DoE resort at recruiting and deploy foreign nationals to fill vacant posts in scarce subject particularly Maths and Physical Sciences. Most schools already are getting assistance from this programme and it seems to be very functional.

Sunday Times (30 September 2007:07) confirmed this when indicating that former MEC in charge of education in Limpopo province admitted that teachers are recruited from neighboring countries to ease Physical Sciences Crisis. Foreign teachers will be posted to rural schools snubbed by locals.

2.4.5 RECRUITING RESIGNED TEACHERS BACK TO SYSTEM

Recruitment of retired teachers could also help to increase the number of qualified teachers in the system. Most teachers were compelled and attracted by different reasons and objectives to resign from teaching fraternities. Some did not go well with the chances they wanted to take in other sectors of economy and they still consider going back to teaching. For that purpose, Department of Education is offering permanent jobs in teaching fraternity to attract teachers who are willing to rejoin education system after taking severance package (www.SouthAfrica.info.edufacts.htm).

2.5 MOTIVATION TOWARDS LEARNING PHYSICAL SCIENCES

Motivation plays an important role in as far as learner performance is concerned. Hanrahan (1998:20) and Barlia and Beeth 1999:27) expressed the importance of learner motivation by adding that student–Teacher expectation on students and their allowance of students learning autonomy would influence student's engagement and commitment to learning(Hanrahan: 1998:22).

Teachers' methods and style of teaching can influence learners' motivation. Teachers' uniqueness, personality and teacher–student relationship also influence students. Although student are motivated to learning Physical Sciences, teachers teaching style and learners' believes of the relationship between previous and new concepts could motivate them to learn.

In his investigation in motivation towards learning Physical Sciences (Wu: 1999:15) discovered that most learners were motivated by zeal to please their parents and also the mere fact that they have opportunities to conduct laboratory activities were the main source of motivation.

Teachers' unique personality, teachers teaching methods and learners beliefs of the relationship between previous and new concepts could motivate learner's teacher relationship between previous and new concepts could motivate them to learn and to superficial or deep cognitive engagement.

Availability of the laboratory and the laboratory facilities are the other motivating factor. Most learners reason for doing Physical Sciences does not go beyond passing Gr.12.Some learners are doing Physical Sciences so that they will be able to apply what they learn in their daily lives. Most students are motivated to learn Physical Sciences by conducting laboratory activities. This gives learners sensual excitement and provokes more interest on learners to learn more on Physical Sciences.

Science programmes for high school in Science and other school Science completions may serve as a significant means of motivation. Programmes like Science Olympiads and are done annually the high school and this helps to improve learners esteem interest on the subject.

Wits University is also funding a targeting talent program which is taking very few learners, but it still makes an impact since learners are motivated to work harder in order to win the scholarships. The program should improve the number of learners who are taking teaching as a profession focusing on Maths and Physical Sciences.

2.6 SUMMARY

Authors and Researchers had discussed and bring their viewpoints about the following issues in this chapter: The concept Physical Sciences, requirements to effect performance of Physical Sciences learners.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

In this chapter, researcher discussed research design and methodology. Methodology comprised the followings: - Population of the study, sampling procedure, sample, instrument of research, data analysis and interpretation. Validity, reliability, ethical considerations and summary were also detailed.

3.2 RESEARCH DESIGN

Researcher use quantitative research design since it allowed him to plan the course of the investigation precisely and unambiguously, it provided a numeric description of trend, attitudes or opinions of the population by studying that particular population. Through this design, researcher was able to conduct cross-sectional and longitudinal studies using questionnaires for data collection. The design was convenient for this enquiry as it helped the researcher to best understand factors that influence the outcome. Qualitative design method was more prompt in this study since it established the highest possible degree of objectivity and was relevant to statistical data applied (Creswell, 2009: 98; Rudenstam & Newton, 1992:24). The next section focused on the methodology of the study.

3.3 RESEARCH METHODOLOGY

Research methodology comprised the followings:-

3.3.1 POPULATION

The target population comprised of sixteen (16) high school principals, 16 Gr.12 Physical Sciences teachers, 400 grade 12 learners who were doing physical Sciences in 2010 and 1Physical Sciences Subject Advisor. The total population was therefore made up of 433 people.

3.3.2 SAMPLING

Researcher applied Systematic Sampling Method to reduce the population into a workable number by using multiples of two (2) and twenty five (25). The multiples of 2 were used for sampling 16 principals and 16 teachers, whereas multiples of 25 were used to sample learners' population into a workable number. The researcher wrote names of all high schools in the circuit which were 16 on the paper alphabetically. Numbers 1 – 16 were written against the names of schools. Schools that received numbers in multiples of 2 were sampled. One Physical Sciences Subject Advisor was automatically included as part of the sample (Nachmias & Nachmias 1997:179)

3.3.3 SAMPLE

Sampling of the total population resulted in the following samples; 8 principals, 8 teachers, 16 learners and one (1) Subject Advisor. The total sample was therefore comprised of 33 respondents.

3.3.4 INSTRUMENT OF RESEARCH

The researcher employed Semi-Structured questionnaires since they are the most popularly used instrument in educational researches. Researcher designed Questionnaires in a way that it would not be too demanding and strenuous for respondents to complete (Behr: 1988:12).

Questionnaires were written in a simple language for respondents to understand. Respondents were expected to put a Cross (X) in a block next to an answer they want to choose and Likert scale was also used in the instrument.

Researcher applied for permission from the circuit office before embarking on the actual data collection. He personally distributed questionnaires to sampled schools and guided the respondents on how to complete the questionnaires. Thereafter, respondents completed the questionnaires under the guidance of researcher who collected them upon completion.

3.3.5 DATA ANALYSIS AND INTERPRETATIONS

Polit and Hungler (1993:329) indicated that the purpose of data analysis is to improve some order in the large body of knowledge so that the general conclusion can be reached. To analyse data, researcher used scientific appliances such as Scientific Calculators and computers. Frequencies of responses were reflected on percentages in tables and Interpretations were developed from the respondents' responses.

3.4 VALIDITY

To measure the validity of the instrument, researcher initially submitted the questionnaires to the supervisor for discussions and corrections of aspects such as structuring, relevance and language errors (Burns & Groove (2000:235).

3.5 RELIABILITY

To ensure reliability of the instrument, researcher initially took questionnaires to few principals, teachers and learners who were not part of the sample to complete in order to verify and correct errors before the actual data collection.

3.6 ETHICAL CONSIDERATIONS

Researcher protected the rights and decisions of participants by adhering to ethical codes. Respondents were given an assurance that there would be no harm in engaging themselves in this exercise since their names would not be disclosed and were free to give their own consent. It was also explained to respondents that the information was not meant for business use. Respondents privacy would be considered since the information given would be confidential and anonymous (Burns & Grooves: 2000:23), (Burns & Grooves: 2000:23) and (Strauss & My burg: 2001:61).

3.7 SUMMARY

The chapter focused on research design and research methodology. In methodology, the sampling procedure was detailed on how the sample was found from the existing population.

Validity, reliability of the data collecting instrument was also discussed in detail. Ethical considerations were also detailed.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATIONS

4.1 INTRODUCTION

The collected data is presented in different tables where it was presented in the form of statistics. Variables and frequencies were expressed in percentages. Analysis and interpretations were based on information supplied by the respondents and also from the consulted literature.

SCHEDULE A: ANALYSIS OF THE DATA SUPPLIED BY Gr.12 PHYSICAL SCIENCES LEARNERS

SECTION A: PERSONAL INFORMATION

Q1 Respondents were requested to state their gender.

TABLE 1.

RESPONDENTS	FREQUENCIES	%
Male	8	50
Female	8	50
TOTAL	16	100

In analysing the data in Table 1, the researcher found out that 50% of the respondents indicated that they are male students and the other 50% indicated that they are females. This indicates to the researcher that even though there is gender equity in the learning of Physical Sciences, Performance of Physical Sciences is dominated by male students.

Q2 Respondents were requested to state the age

TABLE 2

RESPONDENTS	FREQUENCIES	%
15-17Yrs	2	12.5
18-20Yrs	13	81.25
21-23Yrs	1	6.25
26Yrs and above	0	0
TOTAL	16	100

The researcher discovered that 12.5% of respondents were between the ages 15 – 17, 81.25% of respondents were between the ages 18 -20 and 6.25% of respondents were between the ages of 21 – 23. This indicates that Physical Sciences learners exit Gr.12 at an older age than the expected age. This means that Physical Sciences learners are failing and delay in lower grades resulting in their exit at an older age

SECTION B: GENERAL INFORMATION.

Q3 Respondents were requested to state the frequencies of times they have been doing Gr.12

TABLE 3

RESPONSES	FREQUENCIES	%
1^{st} time	14	87.5
2^{nd} time	2	12.5
3^{rd} time	0	0
4^{th} time and more	0	0
TOTAL	16	100

In analysing the data pertaining to the information in Table3, researcher discovered that 87.5% of the Respondents were doing Gr.12 for the 1^{st} time and 12.5% of the Respondents were doing Gr.12 for the 2^{nd} time. The researcher therefore realized that performance of Gr.12 Physical Sciences learners is good since there is only 12.5% of learners who are repeating Gr.12 Physical Sciences.

Q4 Respondents were requested to indicate the type of their school according to Curriculum

TABLE 4

RESPONSES	NO.0F REPONDENTS	%
SCIENCE STREAM	0	0
MULTI STREAM	16	100
TOTAL	16	100

In Table 4, the researcher found out that 100% of the respondents indicated that their schools are multi streams schools. The researcher realised that there is no single school in the Sekgosese East Circuit which specialises in Physical Sciences. Learners are not motivated to attend Science schools as their schools are multi streams schools and learners are not competing to be the best in Science because they compete with the non Science students.

Q5 Respondents were requested to indicate their highest academic qualifications

TABLE 5

RESPONDENTS	FREQUENCIES	%
N2	0	0
GRADE 11	16	100
OTHERS	0	0
TOTAL	16	100

In analysing the data in Table 5, the researcher found out that 100% of the respondents have passed Gr.11.This indicate to the researcher that all the respondents met the academic requirements to do Gr.12 Physical Sciences. The researcher realised that even though the respondents have passed Gr.11, their Performance in Gr.12 Physical Sciences learners is still very low.

Q6 Respondents were requested to state whether there are enough relevant text books their schools.

TABLE 6

RESPONSES	FREQUENCIES	%
YES	7	44
NO	9	56
TOTAL	16	100

In table 6, the researcher found out that 44% of respondents indicated that their schools are having enough relevant Physical Sciences text books and 56% of respondents responded negatively. This indicates that there is a serious shortage of Physical Sciences textbooks in schools falling within Sekgosese East circuit. The researcher realised that shortage of relevant textbooks contributes to poor performance Physical Sciences learners.

Q7 Respondents were requested to indicate how often text books are in the Physical Sciences class.

TAB LE 7

RESPONSES	FREQUENCIES	%
ALWAYS	8	50
SELDOM	8	50
NEVER	0	0
TOTAL	16	100

In Table 7, researcher found out that 50% of the respondents indicated that they are using textbooks in their Physical Sciences classes and 50% of the respondents indicated that they not using textbooks in their Physical Sciences classes. Some learners are using Phys Sciences classes and others are not. The use of text books helps learners to gain more information and knowledge and this improves performance.

Q8 Respondents were requested to state whether they have Physical Sciences laboratory at their schools in their school.

TABLE 8

RESPONSES	FREQUENCIES	%
YES	6	36
NO	10	64
TOTAL	16	100

In analysing the above data, the researcher found out that 36% of the respondents indicated that they have laboratories in their schools and 64% of the respondents indicated that they do not have Physical Sciences laboratories in their schools. This indicates that poor performance in Physical Sciences emanates from the lack of laboratories as learners are taught Physical Sciences without experiments. The researcher realised that teaching of Physical Sciences without Physical Sciences experiments contribute to poor performance in Gr.12 Physical Sciences learners.

Q9 Respondents were requested to indicate whether their Physical Sciences teachers use over- head Projectors in Physical Sciences classes.

TABLE 9

RESPONSES	FREQUENCIES	%
YES	4	25
NO	12	75
TOTAL	16	100

In table 9, the researcher 75% of respondents indicated that they do not use overhead projectors in their Physical Sciences classes and 25% of the respondents indicated that use overhead projectors. The researcher realize that some of the schools do not have other teaching aids like overhead projectors because the school principals do not make requisitions lack of Physical Sciences of Physical Sciences teaching aids like overhead projectors affect performance of Gr.12 Physical Sciences performance.

Q10 Researcher was requested to state the number of times respondents attended Physical Sciences experiments in the laboratory this year.

TABLE 10

RESPONSES	FREQUENCIES	%
1X	1	6
2X	1	6
3X AND MORE	3	19
NOTIME	11	69
TOTAL	16	100

In analysing the data , the researcher discovered that 6% of attended once week, 6% of the respondents indicated that they attended Physical Sciences experiments in Physical Sciences laboratories, 19% indicated that they indicated that they attended Physical Sciences twice a week and 69% of respondents indicated that they never they never any experiments in the laboratories this year. It came to the attention of the researcher that performance of Physical Sciences learners is low because experiments are not conducted in their schools.

Q 1 **Respondents were requested to indicate how often they write Physical Sciences exercisers and activities.**

TABLE 1

RESPONSES	FREQUENCIES	%
ONCE A WEEK	3	19
TWICE A WEEK	3	19
SOMETIMES	9	56
EVERY DAY	1	6
NEVER	0	0
TOTAL	16	100

In table A11, 56% of respondents responded that they write Physical Sciences exercises and classworks sometimes, 19% write once a week and 19% also write twice a week and only 6% write class works every day. This indicates of classworks that were given to learners not sufficient and this contributes to poor performance of Gr.12 Physical Sciences learners.

Q12 Respondents were requested to indicate how often their does their teacher them Physical Sciences homework.

TABLE 12

RESPONSES	FREQUENCIES	%
ONCE A WEEK	2	12.
TWICE A WEEK	4	25
SOMETIMES	7	44
EVERYDAY	3	19
NEVER	0	0
TOTAL	16	100

In table 12, 12% of respondents responded that they are give works to do at home by their Physical Sciences teachers once a week, 25% are give twice week and 44%are give sometimes and only 19% is given every day. This indicates that learners are not given enough work to do at work and this contributes to the poor performance of Physical Sciences learners.

Q13 Respondents were requested to state whether their Physical Sciences teachers mark activities with them in the class and give feedback.

TABLE 13

RESPONSES		**%**
YES	**13**	**71**
NO	**3**	**29**
TOTAL	**16**	**100**

In Table 13, the researcher found that 71% of respondents mark their Physical Sciences classworks with their teachers. This indicates that most of the learners are marking their work and are feedback from their teachers. The researcher realized that even though learners are marking their classworks in the class with their teachers, performance of Physical Sciences learners is still very low.

Q14 Respondents were requested to state whether they attend Grade 12 Physical Sciences morning studies.

TABLE 14

RESPONSES	**NO. OF RESPONDENTS**	**%**
YES	8	50
NO	8	50
TOTAL	16	100

In table, 14 the researcher found out that 50% of learners attend G 12 Physical Sciences morning studies and 50% do not attend. This indicated that attendance of Physical Sciences morning studies is not considered very seriously and this affects performance of Physical Sciences learner.

Q15 Respondents were requested to indicate if they have Grade 12 compulsory Physical Sciences afternoon studies in their schools

TABLE 15

RESSPONCES	**FREQUENCIES**	**%**
YES	9	56
NO	7	44
TOTAL	16	100

In analysing data in Table 15 the researcher found out that 56 % of the respondents indicated that their schools conduct Gr.12 Physical Sciences afternoon studies and 44% of the respondents indicated that they their schools do not conduct Gr.12 Physical Sciences afternoon studies. The researcher realises that afternoon studies can be effective to improve Gr.12 Physical Sciences performance. In this analysis, the researcher realize that the researcher realised that though the afternoon studies are adequately conducted within Sekgosese East schools, performance of Gr.12 Physical Sciences learners is still not desirable.

Q16 **Respondents were requested to state whether they have organised Saturday Physical Sciences Saturday lessons at their schools.**

TABLE 16.

RESPONSES	FREQUENCIES	%
YES	6	37
NO	10	63
TOTAL	16	100

In analysing the data pertaining to Table 16, the researcher found out that 37% of teachers responded that they have organized Saturday lessons at their schools and 63% of teachers responded that they do not have organized Saturday lessons at their lessons. It came to the attention of the researcher that not conducting Saturday lessons and this brings down performance of Gr.12 Physical Sciences performance.

Q17 **Respondents were requested to indicate whether they have organised vacation classes at their schools.**

TABLE 17

RESPONSES	FREQUENCIES	%
YES	6	37.5
NO	10	62.5
TOTAL	16	100

In table 17, the researcher found out that 37.5% of the respondents indicated that they have organized vacation lessons at their school and 62.5% of the respondents indicated that they do not have organized vacation lessons in their schools. This is happening because of funds to pay educators to work during school recessions. The researcher realised that this contribute to the poor performance in Gr.12 Physical Science.

Q18 Respondents were requested to state the number of Physical Sciences periods they have in a week.

TABLE 18

RESPONSES	**NO. OF RESPONSES**	**%**
5	5	31
8	9	56
9	2	13
TOTAL	16	100

In analysing the data in Table 18, the researcher has found out that 31% of the respondents indicated that they have Five periods in a week, 56% of the respondents indicated that they have Eight periods in week and 13% of the respondents indicated that they have Nine Physical Sciences periods in a week. This indicates that the periods allocated for Physical Sciences in schools are enough. The researchers then realised that even though the periods allocated for Physical Sciences in schools are enough, this does not assist in bringing up the performance of Physical Sciences.

Q19 **Respondents were requested to indicate as to whether their schools participate in National Science Olympiads.**

TABLE 19

RESPONSES	FREQUENCIES	%
YES	7	44
NO	9	56
TOTAL	16	100

In table 19, the researcher found out that 44% of the respondents indicated that their schools do not participate in the National Science Olympiads and 56% of despondence indicated that they their schools do not participate in National Science Olympiads. The programme is helpful in motivating Physical Sciences learners and this helps to improve Physical Sciences learners Performance as learners are getting chance of gaining knowledge through this competitions.

Q20 **Respondents were requested to indicate their whether they agree/not agree if the following could assist to improve performance of Grade 12 Physical Sciences learners and indicate by choosing one of the provided options.**

20.1 **Respondents were requested to state whether remedial teaching can help to improve Gr.12 Physical Sciences learners' performance.**

TABLE 20.1

RESPONSES	FREQUENCIES	%
A	6	37.5
SA	10	62.5
D	0	0
SD	0	0
TOTAL	16	100

In Table 20.1the researcher found out that 62.5% of respondents responded that they strongly agree that remedial teaching can be helpful to improve performance of Gr.12 Physical Sciences learners, 37.5 % of respondents indicated that they agree that remedial teaching can be of help to improve performance of Gr.12 Physical Sciences learners

Q20.2 Respondents were requested to state whether they agree that extra lessons can help to improve Gr. 12 Physical Sciences learners' performance.

TABLE 20.2

RESPONSES	FREQUENCIES	%
A	4	25
SA	12	75
D	0	0
SD	0	0
TOTAL	16	100

In analysing the data in Table 20.2, the researcher found out that 25% of the respondents indicated that they agree that they agree that extra lessons can help to improve Gr.12 Physical Sciences learners performance and 75 % of respondents indicated that they strongly agree that extra lesson can help to improve Gr.12 Physical Sciences performance. The researcher realised that Extra lessons can help learners to finish their syllabus in time and get more opportunity to make revisions and that can help to improve Gr.12 Physical Sciences learners performance.

Q20.3 Saturday and vacation lessons.

TABLE 20.3

RESPONSES	FREQUENCIES	%
A	2	12.5
SA	14	87.5
D	0	0
SD	0	0
TOTAL	16	100

In table 20.3, researcher found out that 12.5% of the respondents agree that Saturday and Vacation lessons can be helpful to improve performance of Gr.12 Physical Sciences learners whereas 87.5% of respondents strongly agree that Saturday and vacation lessons can help to improve Gr.12 Physical Sciences learner's performance.

Q20.4 **Respondents were requested to state whether provisioning of relevant resources can help to improve Gr.12 Physical Sciences performance.**

TABLE 20.4

RESPONSES	FREQUENCIES	%
A	3	19
SA	13	81
D	0	0
SD	0	0
TOTAL	16	100

In analysing the data pertaining to the information in Table 20.4,19% of respondents agree that provisioning of relevant resources can help to improve Gr.12 Physical Sciences performance whereas 81`% strongly agree disagree that Provisioning of relevant resources can help to improve performance of Gr.12 Physical Sciences learners.

Q20.5 **Respondents were requested to state whether they agree that guiding Physical Sciences teachers can help to improve Gr.12 Physical sciences learners.**

TABLE 20.5

RESPONSES	FREQUENCIES	%
A	5	31
SA	11	69
D	0	0
SD	0	0
TOTAL	16	100

In analysing the data in the Table 20.5, the researcher found out that 31 % of respondents agree that guiding Physical Sciences teachers can help to improve the performance of Gr.12 Physical Sciences learners whereas 69% of the respondents agree that they strongly agree. The researcher realised that guiding of Physical Sciences teachers can be helpful to improve Gr.12 Physical Sciences learners' performance.

Q20.6 Respondents were requested to state whether retention of Physical Sciences teachers can help to improve Gr.12 Physical Sciences' performance.

TABLE 20.6

RESPONSES	NO.OF RESPONDENT	%
A	3	18.75
SA	12	75
D	1	6.25
SD	0	0
TOTAL	16	100

In analysing the data in Table 20.6, 19% of the respondents agree that retention of Physical Sciences teachers can help to improve Gr.12 Physical Sciences learners Performance Gr.12 Physical Sciences performance. 75% of respondents strongly agree that retention of Physical Sciences teachers can help to improve Gr.12 Physical Sciences learner's performance whereas 6.25% of the respondents disagree. The researcher therefore realised that retention of Gr12 Physical Sciences teachers can help to improve Gr.12 Physical Sciences learner's performance.

Q20.7 Respondents were requested to state whether they agree that students who use textbooks can simply make notes.

TABLE 20.7

RESPONSES	FREQUENCIES	%
A	6	38
SA	8	50
D	1	6
SD	1	6
TOTAL	16	100

In Table 20.7, the researcher found out that 38% of respondents agree students who use textbooks can simply make notes, 50% of the respondents indicated that they strongly agree that learners who use Physical Sciences textbooks can simply make notes,6% of the respondents indicated that they disagree and 6% indicated that they strongly disagree that students who use textbooks can simply make notes. The researcher realised that the use of textbooks can encourage students to make notes and this can help to improve Gr.12 Physical Sciences.

Q20.8 **Respondents were requested to state whether they agree that conducting Gr.12 Physical Sciences teacher's workshops can be helpful to improve Physical Sciences performance.**

TABLE 20.8

RESPONSES	FREQUENCIES	%
A	4	25
SA	12	75
D	0	0
SD	0	0
TOTAL	16	100

In Table 20.8, the researcher found out that. 25 % of respondents indicated that conducting Physical Sciences teacher's workshops can help to improve Physical Sciences learners' performance and 75% of respondents indicated that they strongly agree that conducting Physical Sciences teachers' workshops can be of help to increase teachers' knowledge on the subject and this may improve Gr.12 Physical Sciences learners' performance. The researcher realised that conducting Physical Sciences teachers workshops can help to develop teachers knowledge and subject mastering and this may also help to improve Gr.12 Physical Sciences learner's performance.

Q21 **Respondents were requested to state with their parents academic qualifications.**

TABLE 21

RESPONSES	**FREQUENCIES**	**%**
PRIMARY	1	6.3
SECONDARY	6	37.5
COLLEGE	2	12.5
TECHNICAL	0	0
UNIVERSITY	2	12.5
DON'T KNOW	5	31
TOTAL	16	100

In Table 21, the researcher found out that 6.3% of respondents indicated that their parents have Primary education qualification, 37.5% of respondents indicated that their parents has Secondary education, 12.5% of respondents indicated that their parents have University Education qualifications whereas 31% of respondents indicated they don't know anything about their parents academic Qualifications. The researcher realised that most of the parents of the learners are not educated to the extent that they can help their Physical Sciences learners or motivate them. The researcher therefore realised that parents' poor illiteracy is contributing to the poor Physical Sciences learner's performance.

Q22 Respondents were requested to state whether their parents assist them with their Physical Sciences homework.

TABLE 22

RESPONSES	FREQUENCIES	%
YES	2	12.5
NO	14	87.5
TOTAL	16	100

In Table 22 the researcher found out that 87.5% of respondents indicated that their parents do not assist them with their homeworks whereas 12.5% of the respondents indicated that they get assistance from their parents in doing their homeworks. The researcher therefore realised that most of the parents of the learners are illiterate in Physical Sciences and they therefore could not help their Physical Sciences learners. The researcher therefore realised poor performance of Physical Sciences learners getting strong contribution from the parents' illiteracy in Physical Sciences.

Q23 Respondents were requested to indicate if their parents assist them with their Physical Sciences assignments.

TABLE 23

RESPONSES	FREQUENCIES	%
YES	2	13
NO	14	87
TOTAL	16	100

In Table 23,87% of respondents indicate that their parents do not help them in their Physical Sciences assignments and only 13% of the respondents indicate that they are getting assistance from their parents when doing their assignments The researcher realised that higher proportion of the Respondents were not helped by their parents in their assignments because they are not educated. The researcher therefore realised that parents' illiteracy in Physical Sciences contributes to poor performance of Physical Sciences learners.

Q24 Respondents were requested to indicate if parents assist them to revise Physical Sciences classworks and tests.

TABLE 24

RESPONSES	**FREQUENCIES**	**%**
YES	7	44
NO	9	56
TOTAL	16	100

In analysing the data in Table 24, the researcher found out that 44% of respondents indicated that their parents cannot assist them to revise Physical Sciences classworks and tests and 56% of respondents indicated that they do get assistance from their parents in doing revisions with the Physical Sciences classworks and tests.

SCHEDULE B: ANALYSIS OF DATA SUPPLIED BY GR 12 PHYSICAL SCIENCES TEACHERS

SECTION A: PERSONAL INFORMATION

Q1 Respondents were requested to indicate their age.

TABLE 1

RESPONSES	NO.OF RESWPONDENTS	%
20-25 YRS	0	0
26-30YRS	0	0
31-40YRS	4	50
41 AND ABOVE	4	50
TOTAL	8	100

In Table 1, the researcher found out that 50% of respondents indicated that they are at the age of 31-40 years and 50% of the Respondents were at the age of 41 years and above. It came to the researcher's attention that the most teachers teaching Physical Sciences are at the old age. The researcher realised that most of the Physical Sciences teachers are old that they are no longer strong enough to work effectively because of illnesses and tiresome emanating from the old age. The researcher realised that the old age of Physical Sciences teachers is contributing to the Physical Sciences learners' poor performance.

Q2 **Respondents were requested to state their gender.**

TABLE 2

RESPONSES	FREQUENCIES	%
MALE	6	75
FEMALE	2	25
TOTAL	8	100

In Table 2, the researcher found out that 75% of respondents indicated that their gender is male and 25% of respondents indicated that their gender is female. Researcher realised that gender equity is not maintained in as far as Physical Sciences teachers are concerned. Researcher realised that Poor performance of Physical Sciences performance is being increased by the high number of male Physical Sciences teachers which leaves Physical Sciences female learners feeling insecure when taught by dominantly male teachers.

Q3 Respondents were requested to state their highest academic qualification.

TABLE 3

RESPONSES	FREQUENCIES	%
STD10	4	50
BSC	l	12.5
BSC AGRIC	0	0
MSC	1	12.5
OTHERS	2 BED	25
TOTAL	8	100

In Table 3, 50% of respondents indicated that their highest academic qualifications is STD10, 12,5% of respondents indicated that their highest academic qualification is BSC,12% of respondents also indicated that their Highest academic qualification is MSC and 25% of respondents indicated that their highest academic qualification is BED. The researcher realised that most high percentage is not highly qualified. Teachers who are not highly qualified cannot master the subject. The researcher therefore realised the poor academic qualifications contributes to poor performance of Gr.12. Physical Sciences learners' performance.

Q4 Respondents were requested to state their highest professional qualifications.

TABLE 4

RESPONSES	FREQUENCIES	%
PTD	1	12.5
STD	3	37.5
UED	0	0
HED	0	0
HONOURS	0	0
MASTERS	1	12.5
OTHERS	3 (ACE 2 , 1PGCE)	37.5
TOTAL	8	100

In Table 4, the researcher found out that 12.5 % of the respondents is having PTD as their highest professional qualification, 37.5% of the respondents are having STD, 12.5% are having Masters whereas 37% of the respondents are having other qualifications such as ACE, PGCE. Physical Sciences teachers' professional qualification is still far to be desired. The researcher realised that Physical Sciences teachers' qualification are still lacking much to be desired. Subject and professional knowledge is important in effective teaching. A teacher who does not have subject competency and mastery cannot teach effectively. The researcher realised that under- qualification of teachers contributes to poor performance of Gr.12 Physical Sciences learners. This is depicted in this Table 4 where most of the teachers are teaching Physical Sciences with Professional qualifications whereas others are teaching Gr.12 Physical Sciences with Primary education qualifications.

Q5 **Respondents were requested to state the specialisation in physical Sciences.**

TABLE 5

RESPONSES	NO. OOF RESPONDENTS	%
PHYSICS	0	0
CHEMISTRY	2	25
PHYSICS&CHEMISTRY	4	50
GENERAL SCIENCES	1	12.5
NATURAL SCIENCES	1	12.5
TOTAL	8	100

In table 5, the researcher found out that 25% of respondents indicated that they specialised in Chemistry, 50% of respondents have both Chemistry and Physics as their specialisation, 12.5% of the respondents have General Science and 12.5% of the respondents have Natural Sciences.

The researcher realised that Physical Sciences teacher's specialisation is not sufficient. Only 50% respondents indicated that they have both Physics and Chemistry. Most of the respondents have either Physics or Chemistry. This result in their Science teaching to dominate on the section of the subject they master on the expense of the other section. Natural Sciences and General Sciences are not relevant qualifications for the teacher to teach Gr.12 Physical Sciences. The researcher therefore realised that teachers specialisation is contributing to poor performance in Gr.12 Physical Sciences performance.

Q6 **Respondents were requested to indicate the number of years they have been teaching Gr.12 Physical Sciences.**

TABLE 6

RESPONSES	FREQUENCIES	%
1-5 YRS	5	62.5
6-10YRS	1	12.5
11-15YRS	1	12.5
16 YRS AND MORE	1	12.5
TOTAL	8	100

In analysing data in Table 6, the researcher realised that 62.5% of respondents indicated that they have been teaching Physical Sciences for the period a of between 1-5 yrs, 12.5% of respondents indicated that they have been teaching Physical for period between 6 -10 yrs, 12.5% of the respondents indicated that they have been teaching Physical Sciences for a period between 11-15 yrs. Most of Physical Sciences teachers are not experienced. Experience in teaching helps in teacher development and subject mastering. The researcher realised that most of the teachers in Sekgosese East Circuit are still new in the teaching of Physical Sciences. Teachers experience in teaching Gr.12 Physical Sciences contributes to the poor performance of Gr.12 Physical Sciences learners' performance.

Q7 Respondents were requested to state the number of learners in their Physical Sciences classes.

TABLE 7.

RESPONSES	FREQUENCIES	%
1-20	5	62.5
21-40	1	12.5
41-50	1	12.5
51 AND MORE	1	12.5
TOTAL	8	100

In Table 7the researcher found out that 62% of the respondents indicate that they have frequencies of learners in their Physical Sciences learners in their classes is 1 -20. indicated 12.5% of respondents indicated that they have learners 21 -40 in their Physical Sciences classes, 12.5% indicated that they have 41 – 50 learners in their Physical Sciences classes.12.5% of respondents indicated that have 51 and more learners in Physical Sciences learners in their Physical Sciences classes. The researcher realised that frequencies of learners in Physical Sciences learners is not big. Classes are small and manageable. The researcher realised that even though Physical Sciences classes are small and manageable, the researcher realised that performance of Gr.12 Physical Sciences learners is still very poor.

Q8 Respondents were requested to state whether they are satisfied with the remuneration they get as a Physical Sciences educator.

TABLE 8

RESPONSES	FREQUENCIES	%
YES	8	100
NO	0	0
TOTAL	8	100

In Table 8,100% of the respondents indicated that they are not satisfied with the remuneration they get in teaching profession. Dissatisfaction over the salary demoralises Physical Sciences teachers. Instead teachers spend most of their teaching and learning time on streets demonstrating their dissatisfaction and negotiate for better teacher salaries.

Q9 Respondents were requested to indicate a number of Bachelors and Diplomas they produce in Physical Sciences in last year's examinations.

BACHELORS

TABLE 9.1

RESPONSES	FREQUENCIES	%
0	3	37.5
1	2	25
2	1	12.5
4	1	12.5
5	1	12.5
TOTAL	8	100

In Table 9.2, the researcher found out that 37.5% of respondents indicated they did not produced a single Bachelor in the last years Physical Sciences exams, 25% the respondents indicated that they produced 1 Bachelor, 12, 5% of the respondents indicated that they produce only 4 Bachelors whereas 12% of the respondents indicated that they produced 5 Bachelors. The researcher realised that the number of learners who pass and qualify to do Physical Sciences in the University is very low. This indicates that performance of Physical Sciences is not impressive.

DIPLOMAS

TABLE 9.2

RESPONSES	FREQUENCIES	%
0	1	12.5
1	4	50
2	1	12.5
5	1	12.5
7	1	12.5
TOTAL	8	100

In Table 9.2, the researcher found out those 12% respondents indicated that they produced no Diploma in the last Gr.12 Physical Sciences examinations, 50% of respondents indicated that they produced only 1Diploma in the last Physical Sciences examination, 12.5% of respondents indicated that they produces only 2 Diplomas, 12.5% of respondents indicated that they produced 5 Diplomas in the last Physical Sciences examination and 12.5% of respondents indicated that they produced 7 Diplomas in the last Physical Sciences examinations. The frequencies of learners who obtained Diplomas in Physical Sciences is small. The researcher realised that performance of Gr.12 Physical Sciences learners is not up to the expectation.

Q10 Respondents were requested to state average percentage produced by the respondents in the last Grade 12 examination.

TABLE 10

RESPONSES	FREQUENCIES	%
20%	2	25
29%	2	25
44%	1	12.5
79%	1	12.5
91%	1	12.5
100%	1	12.5
TOTAL	8	100

In analysing the data in Table 10 indicated that 25% of the respondents indicated that the average % they produce in the previous examinations is 20%, 25% of the respondents indicated that the average % they produce in the previous examinations is 29%, 12.5% of the respondents indicated that the average% they produce in the previous examinations is 44%, 12.5% of the respondents indicated that the average % of respondents the average % they produced in the previous examinations is 79%, and 12.5% of the respondents indicated that average % they produce in the previous examinations 91%. This indicated to the researcher that performance of Grade 12 Physical Sciences learners is very low.

Q11 Respondents were asked the frequencies of times they underwent In-Service-Training.

TABLE. 11

TABLE 11

RESPONSES	FREQUENCIES	%
1X	1	12.5
2X	1	12.5
3X AND MORE	0	0
NO TIMES	6	75
TOTAL	8	100

In Table 11, the researcher found out that 12.5% of the respondents indicated that they underwent in-service training 12.5% of respondents indicated that they underwent In-Service Training twice and 75% of the respondents indicated that they had never attended any in-service training. It is evident from the depiction on the table that Gr.12 Physical Sciences teachers did not optimally attend in-service training. In-service training is very important to develop teachers. The researcher realised that of Physical Sciences teachers to attend in-service training contribute to Gr.12 Physical Sciences learners Performance.

Q12 Respondents were requested to state whether their schools have Physical Sciences laboratories.

TABLE 12

RESPONSES	FREQUENCIES	%
YES	1	12.5
NO	7	87.5
TOTAL	8	100

In Table B12, the researcher found out that 87.5% of the respondents indicated that they do not have Physical Sciences laboratory at their schools and only 12.5% indicated they have laboratories in their schools. This indicates that most schools are not having laboratories. Physical Sciences is taught theoretically with no experiments in the laboratories. The researcher realise that teaching Physical Sciences without doing experiments promotes cram work type of learning. The researcher realised that teaching Physical Sciences without doing experiments contributes to poor performance of Physical Sciences learners.

Q13 Respondents were requested to state whether their schools have Physical Science laboratory equipments.

TABLE 13

RESPONSES	FREQUENCIES	%
YES	2	25
NO	6	75
TOTAL	8	100

In Table 13, the researcher found out that 25% of the respondents indicated that their schools have laboratory equipments and 75% of the respondents indicated that their schools do not have laboratory equipments. The researcher realised that without laboratory equipments, learners cannot conduct experiments. The unavailability of laboratory equipments contributes to poor performance of Gr.12 Physical Sciences learners.

Q14 Respondents were requested to indicate if they use overhead projectors in GR. 12 Physical Sciences classes.

TABLE 14

RESPONSES	FREQUENCIES	%
YES	2	25
NO	6	75

In table 14, the researcher found out that 75% of the respondents indicated that they do not use overhead projectors in Physical Sciences classes and only 25% of respondents indicated that they use overhead projectors in their Physical Sciences schools. Overhead projectors are helpful to help learners understand what they are taught. The researcher realised that unavailability of overhead projectors is contributing to the poor performance of Physical Sciences learners.

Q15 Respondents were requested to indicate whether they use videos in their Physical Science classes.

TABLE 15

RESPONSES	FREQUENCIES	%
YES	1	12.5
NO	7	87.5

In table 15, the researcher found out that 12.5% of respondents indicated that they use videos in their Physical Sciences classes and 87.5% of the respondents indicated that they do not use videos in their Physical Sciences classes. The researcher realised that the use of videos is not applied optimally in Physical Sciences classes in the Sekgosese East circuit.

The researcher realised that failure to use videos Physical Sciences classes contributes tom poor performance in Physical Sciences learners.

Q16 Respondents were requested to indicate the frequencies of times they conduct Physical Sciences experiments in the laboratory.

TABLE 16

RESPONSES	**FREQUENCIES**	**%**
ONCE A WEEK	3	37.5
TWICE A WEEK	2	25
NO TIMES	3	37.5
TOTAL	8	100

In Table 16, 37.5 % of respondents indicated that they conduct experiments once week in laboratories, 25% of respondents indicated that they conduct experiments twice a week and 37.5 % of the respondents indicated that they never conducted any experiment in the laboratory this year. The researcher however realised that conduction of experiments in Gr12 Physical Sciences classes is not satisfactory. The researcher realise that experiments are important to enhance learning of Physical Sciences. The researcher therefore realised that the unsatisfying manner of conduction Physical Sciences experiments contribute to poor performance of Physical Sciences learners in the Sekgosese East circuit.

Q17 Respondents were requested to state how often they use Physical Sciences text books in the class.

TABLE 17

RESPONSES	FREQUENCIES	%
ALWAYS	7	87.5
SELDOM	1	12.5
NEVER	0	0
TOTAL	8	100

In Table 17, the researcher found out that 87.5% of the respondents indicated that they always use Physical Sciences textbooks in their Physical Sciences classes and 12.5% of the respondents indicated that they seldom use Physical Sciences textbooks in Physical Sciences classes. The researcher realised that even though textbooks are used optimally in Physical Sciences classes, performance of Physical Sciences learners is still low.

Q18 Respondents were requested to indicate the number of homeworks they give their Physical Sciences learners in a week.

TABLE 18

RESPONSES	FREQUENCIES	%
1	2	25
2	4	50
3	2	25
4 AND MORE	0	0

In analysing the data in Table 18, the researcher found out that 25% of the respondents indicated that they gives One homework to their Physical Sciences learners in a week, 50% of respondents indicated that they give their Physical Sciences learners Two homework in a week and 25% of respondents indicated that they give their Physical Sciences learners three homeworks in a week. The researcher realised that optimal number of homeworks are given to learners in Physical Sciences classes. The researcher realised that although optimal number of homeworks are given to the learners, performance of Gr.12 Physical Sciences learners in the Sekgosese East Circuit is still not satisfying.

Q19 **Respondents were requested state the frequencies of classworks they give to Physical Sciences class in a week.**

TABLE 19

RESPONSES	FREQUENCIES	%
1	1	12.5
2	6	75
3	1	12.5
4 AND MORE	0	0
TOTAL	8	100

In analysing the data in Table, the researcher found out that 12.5% of the respondents indicated that they give their Physical Sciences learners one classwork in a week, 75% of the respondents indicated that they give their learners Physical Sciences classworks in a week and 12.5 % of the respondents indicated that they give their Gr.12 Physical Sciences learners three classworks in a week. The researcher realised that the number of classwworks that Gr.12 Physical Sciences teachers are giving their learners in a week is satisfying. The researcher realised that although the Physical Sciences teachers are3 giving the Physical Sciences learners enough classworks to do, the researcher realised that performance of Gr.12 Physical Sciences learners is still unpleasant.

Q20 Respondents were requested to indicate whether they mark homeworks with learners in the class and make corrections.

TABLE 20

RESPONSES	FREQUENCIES	%
YES	7	87.5
NO	1	12.5
TOTAL	8	100

In analysing the data in table 20 the researcher found out that 87% of the respondents indicated that they mark Physical Sciences learners homeworks with the learners and make corrections, 12.5% of the respondents indicated that they do not mark Physical Sciences learner's homeworks in class and make corrections. The researcher realised that Performance of Gr.12 Physical Sciences learners performance is consistently staying even though teachers are marking homeworks with learners in that Physical Sciences classes.

Q21 Respondents were requested to indicate whether their schools conduct Physical Sciences morning study.

TABLE 21

RESPONSES	FREQUENCIES	%
YES	5	62.5
NO	3	37.5
TOTAL	8	100

In Table 21, the researcher found out that 62.5 % of the respondents indicated that their schools conduct Gr.12 Physical Sciences morning studies and 37.5% of respondents indicated that they do not conduct6 Gr.12 Physical Sciences morning studies .The data was evident to the researcher that morning studies is conducted and attended by most of the Physical learners in the Sekgosese East circuit.

Q22 Respondents were requested to indicate if they conduct Physical Sciences afternoon studies at their school.

TABLE 22

RESPONSES	FREQUENCIES	%
YES	4	50
NO	4	50
TOTAL	8	100

In Table 22, the researcher realised that 50% of the respondents indicated that they conduct Gr.12 Physical Sciences afternoon studies and the other 50% of respondents indicated that they do not conduct Gr.12 Physical Sciences afternoon studies in their schools. The researcher realised that Gr.12 Physical Sciences afternoon Studies is not conducted sufficiently. Physical Sciences learners should have more time to study, practice and conduct experiments in the laboratory. The researcher realised that failure to conduct Gr.12 Physical Sciences learners is one of the contributing factor towards the poor performance of Gr.12 Physical Sciences learners.

Q23 Respondents were requested to indicate whether they have compulsory afternoon lessons for Physical Sciences students at their schools.

TABLE 23

RESPONSES	FREQUENCIES	%
YES	5	62.5
NO	3	37.5
TOTAL	8	100

In Table 23 , the researcher found out that 62,5% of respondents indicated that they have Physical Sciences afternoon lessons in their schools 37.5 % of the respondents indicated that they have compulsory Gr.12 Physical Sciences afternoon lessons in their schools and 37.5% of the respondents indicated that they do not have Gr.12 Physical Sciences Compulsory afternoon lessons in their schools. Compulsory lessons are being conducted in Sekgosese circuit secondary schools for Gr.12 Physical Sciences learners. The researcher realised that even though compulsory Gr.12 Physical Sciences afternoon lessons are conducted, performance of Gr.12 Physical Sciences learners very unpleasant.

Q24 **Respondents were requested to indicate whether they have organized Physical Science Saturday lessons at their schools.**

TABLE B24

RESPONSES	FREQUENCIES	%
YES	0	0
NO	8	100
TOTAL	8	100

In Table 24, the researcher realised that 100% of respondents indicated that they have organised Physical Sciences Saturday lessons at their schools. The researcher realised that there are Saturday lessons at their schools. The researcher realised that although Saturday lessons are conducted, performance of Gr.12 Physical Sciences remains low.

Q25 Respondents were requested to give their perceptions as to whether the following can help to improve Gr.12 Physical Sciences students' performance and indicate the degree in which they agree or disagree.

Q25.1 Respondents were requested to state whether they agree that remedial teaching can help to improve Gr.12 Physical Sciences learners' performance

TABLE 25.1

RESPONSES	FREQUENCIES	%
A	3	37.5
SA	5	62.5
D	0	0
SD	0	0
TOTAL	8	100

In Table 25.1, 37.5 % of the respondents indicated that they agree that remedial teaching can help to improve Gr.12 Physical Sciences learner's performance and 62.5% of the respondents indicated that they strongly agree that remedial teaching can help to improve Gr.12 Physical Sciences learners' performance. The researcher then realised that remedial teaching can help to improve Gr.12 Physical Sciences performance.

Q25.2 Respondents were requested to state whether they agree that extra lessons can help to improve Gr.12 Physical Sciences learners' performance.

TABLE 25.2

RESPONSES	FREQUENCIES	%
A	2	25
SA	6	75
D	0	0
SD	0	0
TOTAL	8	100

In Table 25.2 researcher found out that 25% of the respondents indicated that they agree that Extra lessons can help to improve Gr.12 Physical Sciences learners' performance and 75% of respondents indicated that they strongly agree that extra lessons can help to improve Gr.12 Physical Sciences performance. Researcher realised that extra lessons can help to improve Gr.12 Physical Sciences learners performance.

Q25.3 Respondents were requested to state whether they agree that Saturday and vacation lessons can help to improve Gr.12 Physical Sciences performance.

TABLE 25.

RESPONSES	FREQUENCIES	%
A	1	12.5
SA	7	87.5
D	0	0
SD	0	0
TOTAL	8	100

In anlaysing the data in Table 25.3, the researcher found out that 12.5% of respondents indicated that they agree that Saturday and vacation lessons can help to improve Gr.12 Physical Sciences learners Performance And 87% of respondents indicated that they strongly agree that Saturday and Vacation lessons can help to improve Gr.12 Physical Sciences performance. The researcher realised that Saturday and Vacation Lessons can help to improve Gr.12 Physical Sciences learners Performance.

Q25.4 Respondents were requested to state whether they agree that Provisioning of relevant resources can help to improve GR.12 Physical Sciences learner's performance.

TABLE 25.4

RESPONSES	FREQUENCIES	%
A	3	37.5
SA	5	62.5
D	0	0
SD	0	0
TOTAL	8	8

In Table 25.4, the researcher realised that 37.5% of respondents indicated that they agree that Provisioning of relevant resources can help to improve Gr.12 Physical Sciences performance and 62.5% of the respondents indicated that they strongly agree that Provisioning of relevant resources can help to improve Gr.12 Physical Sciences learners' performance.

Q25.5 Respondents were requested to state whether they agree that guiding Physical Sciences teachers can help to improve Gr.12 Physical Sciences learners.

TABLE B25.5

RESPONSES	FREQUENCIES	%
A	3	37.5
SA	5	62.5
D	0	0
SD	0	0
TOTAL	8	100

In Table 25.5, the researcher realised that 37.5% of respondents indicated that they agree that guiding Physical Sciences teachers can help to improve Gr.12 Physical Sciences performance and 62.5% of the respondents indicated that they strongly agree that Guiding Gr.12 Physical Sciences learner's performance. Researcher realised that guiding Gr.12 Physical Sciences learner's performance.

Q25.6 Respondents were requested to state whether Gr.12 retention of Physical Sciences teachers can help to improve Gr.12 Physical Sciences learners Performance.

TABLE 25.6

RESPONDENTS	FREQUENCIES	%
A	0	0
SA	8	100
D	0	0
SD	0	0

In Table 25.6 the researcher found out that 100% of respondents indicated that they strongly agree that Retention of Physical Sciences teachers can help to improve Gr.12 Physical Sciences performance. The researcher realised that retention of Physical Sciences teachers can improve performance of Gr.12 Physical Sciences learners Performance.

Q25.7 Respondents were requested to state whether they agree toast students who have textbooks can simply make notes.

TABLE 25.7

RESPONSES	FREQUENCIES	%
A	2	25
SA	5	62.5
D	1	12.5
SA	0	0
TOTAL	8	100

can simply make notes and 12.5% of respondents indicated that they disagree that students who have textbooks can simply make notes. The researcher therefore realised that students with textbooks can simply make notes.

25.8 Conducting Physical Sciences teachers workshops and in service training.

TABLE B28

RESPONSES	FREQUENCIES	%
A	0	0
SA	8	100
D	0	0
SD	0	0
TOTAL	8	100

In Table 25.8, the researcher found out that 100% of the respondents indicated that they strongly agree that conducting Physical Sciences teacher's workshops and in-service training can improve Gr.12 Physical Sciences performance.

SCHEDULE C: ANALYSIS OF DATA AS SUPPIED BY THE SUBJECT ADVISOR

OF SEKGOSESE EAST CIRCUIT

SECTION A: PERSONAL INFORMATION.

Q1 Respondent was requested to state his age.

TABLE 1

RESPONSES	FREQUENCIES	%
50 and above	1	100

In Table 1, researcher found out that the respondent is at the older age in which he/she may not be able to execute the duties promptly. The researcher realised that performance of Gr.12 Physical Sciences learners is low because the Physical Sciences Subject Advisor is old to the extent that he is no longer active to effectively perform his duties.

Q2 Respondent was requested to state his gender.

TABLE 2

RESPONSES	FREQUENCIES	%
MALE	1	100

In Table 2, the researcher found out that the respondent is a male. The researcher realised that gender equity is not applied since that there is only a male Subject Advisor in the Sekgosese East circuit. The researcher realised that the female Gr.12 students are performing very low because they don't have female Subject Advisor.

SECTION B: GENERAL INFORMATION

Q3 Respondent was requested to state his highest academic qualification.

TABLE 3

RESPONSES	FREQUENCIES	%
DGREE	1	100

In Table 3, researcher found out that the respondent hold as his highest academic qualification. The researcher realised that the respondent is highly learned and he has relevant knowledge that can help to improve Gr.12 Physical Sciences performance. The researcher again realised that performance of Gr.12 Physical Sciences performance is still very low even when the subject advisor is highly educated.

Q4 Respondent was requested to indicate to indicate his highest professional qualifications.

TABLE 4.

RESPONSES	FREQUENCIES	%
HED	1	100

In Table 4, researcher found out that the respondent holds HED as his highest professional qualification. The respondent qualifications and knowledge are relevant enough to improve Physical Sciences learner's performance. The researcher realised that even though the respondent is having good professional Qualifications, performance of Gr.12 Physical Sciences is still very unpleasant.

Q5 Respondent was requested to indicate his experience in years which he has been working as a Subject Advisor.

TABLE 5

RESPONSES	FREQUENCIES	%
11 – 15	1	100

In Table 5, the researcher found out that the respondent has been a Subject Advisor for the period of 11-15 years. Researcher realised that the respondent has a long experience as a Physical Sciences Subject Advisor. Researcher realised that the longer the experience in service the better and more effective a person can do his services .The researcher realised that even though the respondent is more experienced , performance of Gr.12 Physical Sciences learners is still very low .

Q6 Respondent was requested to indicate his specialization in Physical Sciences.

TABLE 6

RESPONSES	FREQUENCIES	%
Physics and Chemistry	1	100

In Table 6, Researcher found out that the respondent specialised in Physics and Chemistry the respondent has good and proper specialisation that can help the Gr.12 Physical Sciences learners from poor performance. Researcher realised that Gr.12 Physical Sciences learners are still performing poorly despite the fact that their Physical Sciences Subject Advisor is highly qualified with Physics and Chemistry.

Q7 Respondent was requested to indicate if all the schools in Sekgosese east circuit have organised vacation lessons.

TABLE 7

RESPONSES	FREQUENCIES	%
YES	1	100

In Table 7, the researcher found out that the respondent indicated that all the schools in the Sekgosese East Circuit have organised vacation lessons .The researcher realised that the vacation lessons are important because they make it possible for earners to get more chance to finish up their syllabi and also enables learners more time to revise their work The researcher however realised that although the vacation lessons are conducted in all that high schools of Sekgosese East circuit , performance of Gr.12 Physical Sciences learners is still very unpleasant .

Q8 Respondent was requested to indicate whether all the high schools in the Sekgosese East circuit have enough relevant textbooks.

TABLE 8

RESPONSES	**FREQUENCIES**	**%**
YES	**1**	**100**

In Table 8, the researcher found out that the respondent indicated that all the schools in the Sekgosese East schools have enough relevant textbooks. Text books are the most precious resource required in schools. Textbooks make it simple for learner to follow and study what they did in the class.

Because of the presence of text books learners can simply make their own notes in the absence of the teacher and this can enhance good performance in Physical Sciences .The researcher realised that even though the text books are available, performance of Gr.12 Physical Sciences learners remains very poor.

Q9 Respondent was requested to indicate whether all the high schools in the Sekgosese circuit have laboratories.

TABLE9

RESPONSES	FREQUENCIES	%
NO	1	100

In analysing the data in Table 9, the researcher found out that the respondent indicated that all the schools in Sekgosese East circuit are having Physical Sciences laboratories. The presence of laboratories helps learners to do experiments .Because of the presence of laboratories, learners are not learning theoretical part of Physical Sciences but they even learn to conduct experiments and do away with cram work. Experiments broaden learner's minds and also sharpen their reasoning, and this helps to bring about good performance in Physical Sciences. The researcher here realised that despite the presence of laboratories, performance of Gr.12 Physical Sciences learners is still very low.

Q10 Respondent was requested to indicate whether all the high schools in the Sekgosese East circuit has electric supply.

TABLE 10

RESPONSES	FREQUENCIES	%
YES	1	100

In Table 10, the researcher found out that that the respondent indicated that all the schools in the Sekgosese East circuit have electric supply. Because of the presence of electricity, learners who stay next to schools can study during the evening` s at schools and write homeworks. Availability of electricity makes it possible for Physical Sciences classes to use of electric appliance like, Computers, microscopes, overhead projectors and others. This can help to bring about good Physical Sciences performance. Although there is a supply of electricity in the high schools of Sekgosese, this is not assisting to bring the performance of Physical Sciences learners in Sekgosese East Circuit to a sound footing.

Q11 **Respondent was requested to indicate the frequencies of times in the last two years did him visited Sekgosese East high schools to assist Physical Sciences teacher and learners.**

TABLE 11

RESPONSES	FREQUENCIES	%
3X and more	1	100

The respondent in Table 11 indicated that he visited the Sekgosese circuit high schools more than thrice in the last two years to assist Gr.12 Physical Sciences learners and teachers. Support and departmental intervention is a good strategy to improve and maintain performance on top. Through departmental teacher and leaner support, clarifications are obtained when and where they are necessary. The researcher however realised that although the subject Advisor of Physical Sciences is assisting the Gr.12 Physical Sciences teachers and learners, performance of Gr.12 Physical Sciences learners is not up to standard.

Q12 Respondent was requested to indicate the type of assistance that they gave to Physical Sciences learners and teachers of the Sekgosese East high schools high schools during his visit at their schools.

TABLE 12

RESPONSES	FREQUENCIES	%
In-service training (Insert) to educators and teaching and motivation to learners	1	100

In Table 12 ,the researcher found out that the respondent indicated that he helps the teachers and learners of Physical Sciences with the in-service training ,teaching and motivation of learners .In-service training of teachers helps to develop teachers and increase teachers knowledge Because of the in-service training , teachers become more knowledgeable and develop more subject competency .teaching and learner motivation help to motivate learners and help learners to understand where they are havi8ng problems .The researcher realised that despite all these efforts that the subject advisor is doing ,performance of Gr.12 Physical Sciences learners is still low .

Q13 Respondent was requested to indicate a number of times in the last two years did he organised in-service training in the Sekgosese East circuit.

TABLE 13

RESPONSES	FREQUENCIES	%
3 x and more	1	100

In Table 13, the researcher found out that the respondent indicated that he organised In-Service Training more than twice in the Sekgosese East circuit. In-service training helps to develop teacher career, improve teachers knowledge and also to increase teacher's subject competency. Learners whom are taught by a person who is knowledgeable may perform extremely very well in Physical Sciences. The researcher realised that even though in-service training are organised for Gr.12 Physical Sciences teachers in the Sekgosese East circuit ,Gr.12 Physical Sciences learners performance still lacks much to desire.

Q14 Respondent was requested to indicate whether he agrees or not if the followings can help to improve Gr.12 Physical Sciences learners' performance.

Q14.1 **Remedial teaching can be helpful to improve Gr.12 Physical Sciences performance.**

TABLE 14.1.

RESPONSES	NO. OF NRESPONSES	%
SA	1	100

In table 14.1, the researcher found out that the respondent indicated that he strongly agrees that remedial lessons can help to improve Gr.12 Physical Sciences Learners performance.

Remedial lessons help learners and teachers to identify those learners who did not master their lessons in the class and teach them during their spare time or weekends. This may help learners to get clarifications and master the section that they did not understand during their lessons.

Q14.2 Extra lessons can help to improve Gr.12 Physical Sciences performance.

TABLE 14.2

RESPONSES	NO. OF RESPPONDENTS	%
SA	1	100

In Table 14.2, the researcher found out that the respondent indicated that he strongly agrees that extra lessons can help to improve Gr.12 Physical Sciences performance. Extra lessons help the see aspects that are not well mastered in the class. Because of the extra lessons, learners get the opportunity to address their learning difficulties and revise their subject content. Extra lessons also provide learners with more time to discuss and get feedback from the teacher. Learners can write as much work as possible and correct. The researcher realised that though extra lessons are helpful, Gr.12 Physical Sciences learners' performance is still lacks much to be desired.

Q14.3 Saturday and vacation lessons can help to improve Gr.12 Physical Sciences performance.

TABLE 14.3

RESPONSES	FREQUENCIES	%
SA	1	100

In Table 14.3 the researcher found out that the respondent indicated that he strongly agrees that Saturday and vacation lessons can help to improve Gr.12 Physical Sciences performance. Saturday and vacation lessons may provide Physical Sciences teachers and learner with more time to finish their syllabi. This may also make a provision to Physical Sciences learners and teacher of more time to revise their work and make some catch-ups where necessary.

Q14.4 Provision of relevant resources can help to improve Gr.12 Physical Sciences Performance

TABLE 14.4.

RESPONSES	FREQUENCIES	%
A	1	100

In Table 14.4, the researcher found out that the respondent indicated that he agrees that the provisioning of relevant resources can help to improve Gr.12 Physical Sciences learner's performance. Relevant resources include laboratories, laboratory equipments, videos, overhead projectors and many others. Because of relevant resources, Physical Sciences learning is more of practical than theoretical. Physical Sciences is more of doing in the laboratories and researching than passive cram work type of learning.

Because of the presence relevant resources, learners may actively participate in group discussions, researches and experiments. Therefore the researcher realised that the provisioning of Gr.12 Physical Sciences relevant resources may help to improve Gr.12 Physical Sciences learners' performance.

Q14.5. Guiding Physical Sciences teachers can be helpful to improve Gr.12 Physical Sciences performance

RESPONSES	FREQUENCIES	%
SA	1	100

In Table 14.5, the researcher found out that the respondent indicate that he strongly agrees that guiding Gr.12 Physical Sciences teachers can help improve Gr.12 Physical Sciences learners performance. Workshops to guide Physical Sciences teacher are helpful to guide them on newly emerging scientific approaches and programmes and keep them updated. The researcher realised that guiding Gr.12 Physical Sciences teachers may help to improve Gr.12 Physical Sciences learners' performance.

14.6 Retention of Physical Sciences teachers can help to improve Gr.12 Physical Sciences learners' performance

Table 14.6

RESPONSES	FREQUENCIES	%
SA	1	100

In Table 14.6, the researcher found out that the respondent indicated that he strongly agrees that retention of Physical Sciences teachers can help to improve Gr.12 Physical Sciences learners` performance.

If Physical Sciences teachers are encouraged through remunerations, they may not leave teaching profession for better paying professions. Physical Sciences teacher shortage may not be experienced if Physical Sciences teachers are not leaving Teaching profession. Because teachers are leaving teaching profession, it is common that a school may have only one or two Physical Sciences teachers leaving Physical Sciences teachers overburdened with work as they are destined to teach from Gr.8 to Gr.12. Teaching of that nature cannot bring quality teaching and learning. Teachers can teach properly if they teach in balanced classes in which they can perform continuous assessment and control learners' activities effectively.

14.7 Students who have textbooks can simply make notes

Table 14.7

RESPONSES	FREQUENCIES	%
SD	1	100

In Table 14.7, the researcher found out that the respondent indicated that he she strongly disagrees that students with textbooks can simply make notes. The availability of textbooks does not automatically mean that learners will make notes. Making of notes goes with the support and the style of teaching which the teacher applies in his/her Physical Sciences class. Text books can promote notes making, studying, reference and exploration of new concepts and new scientific approaches that may improve Gr.12 Physical Sciences classes.

14.8 Conducting Physical Sciences teachers' workshops and In-Service Training can help to improve Gr.12 Physical sciences learners' performance

Table 14.8

RESPONSES	FREQUENCIES	%
SA	1	100

In Table 14.8, the researcher found out that the respondent strongly indicated that he strongly agrees that conducting Physical Sciences teachers' workshops and In-Service Training can improve Gr.12 Physical Sciences learner's performance. Workshops and In-Service Training are helpful to bring about personnel development and teacher competency in a subject. Learners who are taught by a teacher who is affluent in a subject can understand the subject better because the teacher is always prepared to give some explanations and clarifications if need be. The researcher realised that conducting Gr.12 Physical Sciences teachers workshops may help to improve Gr.12 Physical Sciences.

SCHEDULE D

ANALYSIS OF DATA SUPPLIED BY THE PRINCIPALS OF HIGH SCHOOLS THAT ARE FOUND WITHIN SEKGOSESE EAST CIRCUIT.

SECTION A: PERSONAL INFORMATION.

Q1. Respondents were requested to state their gender.

TABLE 1.

RESPONSES	FREQUENCIES	%
MALE	7	87.5
FEMALE	I	12.5
TOTAL	8	100

In table 1 the researcher discovered that 87% of respondents indicated that they are males and 12.5% of respondents indicated that they females. The researcher realised that female participation in leadership positions of school is still marginalised. The researcher realised that female learners may not feel insecure under the leadership of male principals. The researcher realised that that dominance of Male principals over female principals contribute to poor performance of Gr.12 Physical Sciences performance.

Q2 Respondents were requested to state their age.

TABLE.2

RESPONSES	FREQUENCIES RESPONDE	%
20-30	0	0
31-40	0	0
41-50	4	50
51 AND ABOVE	4	50
TOTAL	8	100

In Table.2, the researcher found out that 50% of the respondents indicated they are between the ages 41-50 whereas the other 50% of the respondents indicated that they are at the age of 51 and above. The researcher realised that most of the principals in Sekgosese East Circuit are at the optimal age in which they may work effectively. Principals are at the younger age in which they are energetic. The researcher realised that even thou the Principals of secondary schools are young and energetic, performance of Physical Sciences learners is still undesirable.

Q3 **Respondents were requested to state their highest academic qualifications.**

TABLE 3

RESPONSES	NUMER OFRESPONDENTS	%
STD 10	1	12.5
DEGREE	4	50
HONOURS	3	37.5
MASTERS	0	0
OTHERS	0	0
TOTAL	8	100

In table 3, 12% of respondents indicated that they have STD 10 as their highest academic qualification, 50% of respondents indicated that they have degrees, 37.5% of respondents indicated that they have Honours degrees. The researcher realised that principals' qualifications are extremely good .The researcher realised that even thou the principals qualification is very good, performance of Gr.12 Physical Sciences in Sekgosese East circuit is still very poor.

Q4 Respondents were requested to state their highest professional qualifications.

TABLE 4.

RESPONSES	**FREQUENCIES**	**%**
PTD	0	0
STD	3	37.5
UED	0	0
HED	3	37.5
HONOURS	1	12.5
MASTERS	1	12.5
PHD	0	0
OTHERS	0	0
TOTAL	8	100

In table 4, the researcher found out that 37.5% of respondents indicated that they have STD as their highest professional's qualifications, 37, 5 % of the respondents indicated that they have HED, 12.5% of the respondents indicated that they have Honours whereas the remaining 12.5% of the respondents indicated that they have Masters. The researcher indicated that Principals qualification is very good. Principals are knowledgeable and they could effectively lead and direct schools, however the researcher realised that thou the principal professional qualifications are very good, principals qualifications are not helping to improve Gr.12 Physical Sciences performance.

Q5 **Respondents were requested to indicate if they have specialised in Physical Science or not.**

TABLE 5

RESPONSES	FREQUENCIES	%
YES	1	12.5
NO	7	87.5
TOTAL	8	100

In Table 5, the researcher found out that 12.5% of respondents indicated that they have specialised in Physical Sciences, and 87.5% of the respondents indicated that they did not specialised in Physical Sciences. The researcher realised that Principals of high schools in Sekgosese East circuit are illiterate in Physical Sciences as such they cannot assist or motivate Physical Sciences learners in their schools. The researcher therefore realised that poor performance of Physical Sciences learners is perpetuated by the principals' illiteracy in Physical Sciences.

SECTION B: GENERAL INFORMATION

Q6 **Respondents were requested to state their experience in years in which they have been serving as the school principals.**

TABLE 6

RESPONSES	NO.RESPONDENTS	%
1-5YRS	0	0
6-10YRS	3	37.5
11-15YRS	2	25
16-20YRS	3	37.5
21YRS AND ABOVE	0	0
TOTAL	8	100

Table 6 indicates that 37.5% of the respondents indicated that they have been working for years between 6-10 years as secondary schools principals, 25% have served for years 11- 10 years whereas 37.5% indicated that they have been working for 21 years and above as the secondary schools principals. Experience that the principals have is good to make effect. But even thou the principals are experienced, Physical Sciences learners are still performing very bad.

Q7 **Respondents were requested to give the n umber of GR.12 Physical Sciences learners who wrote last year's exams?**

TABLE 7

RESPONSES	FREQUENCIES	%
30	1	12.5
16	1	12.5
45	1	12.5
17	1	12.5
15	2	25
19	1	12.5
26	1	12.5
TOTAL	8	100

In table 7, the researcher found out that 12.5% of the respondents indicated 12% learners wrote the last year Physical Sciences examinations, 12.5% of the respondents indicated 16 learners wrote the last year's Physical Sciences examinations ,12.5 % indicated that 45 learners wrote the last year Physical Sciences examinations ,12.5% of respondents indicated that 17 learners wrote the last year Physical Sciences examinations ,25% of the respondents indicated that 15 learners wrote the last year Physical Sciences examinations, 12.5% of the respondents indicated that 19 learners wrote the last year's Physical Sciences examinations and 12.5% of respondents indicated that 26 learners wrote the last year's Physical Sciences examinations .The researcher realised the total frequencies of learners who wrote the last year's Physical Sciences examinations was small and manageable.

The researcher realised that then that even when the frequencies of learners who write the last year's Physical Sciences examinations, performance of GR.12 Physical Sciences learners is still unsatisfactory.

Q8 Respondents were requested to supply the number of exemptions their learners produced in the last examinations.

TABLE 8.

RESPONSES	FREQUENCIES	%
0	2	25.
1	1	12.5
3	1	12.5
4	2	25
5	1	12.5
12	1	12.5
TOTAL	8	100

In table 8 the researcher found out that from 168 frequencies of learners only 25.This represent only 15% of the learners who wrote the last Physical Sciences examinations managed to get exemption. The researcher realized that the number of learners who passes Gr.12 with exemption is not desirable.

Q9 **Respondents were requested to indicate whether their schools have Physical Sciences laboratory.**

TABLE 9

RESPONSES	FREQUENCIES	%
YES	3	37.5
NO	5	62.5
TOTAL	8	100

In Table 9, 37.5% of the respondents indicated that they have Physical Sciences laboratory in their schools and 62.5% of the respondents indicated that their schools do not have Physical Sciences laboratories. Researcher realised that most of the high schools in that Sekgosese East schools do not have Physical Sciences laboratories. Physical Sciences cannot be taught effectively if it is taught theoretically without experiments laboratory practicals. Researcher realised that absence of Physical Sciences laboratories contributes to poor performance in Physical Sciences.

Q10 Respondents were requested to state if their schools have over-head projectors.

TABLE 10

RESPONSES	**FREQUENCIES**	**%**
YES	4	50
NO	4	50
TOTAL	8	100

In analysing the data in Table the researcher found out that 50% of the respondents indicated that they have overhead projectors their schools and 50% of the respondents indicated that do not have overhead projectors in their schools. The researcher realises that overhead projectors are being used in Physical Sciences classes. Researcher realised that even thou teaching aids are used performance of Physical Sciences learners' remains low.

Q11 Respondents were requested to state whether their schools have enough Physical Sciences text books.

TABLE 11

RESPONSES	**FREQUENCIES**	**%**
YES	8	100
NO	0	0
TOTAL	8	100

In Table 11, the researcher found out that 100% of the respondents indicated that their schools have enough relevant materials.

The researcher knows that textbooks are precious resources that can help bring better results in Physical Sciences. Researcher realised that even thou enough relevant textbooks are available in schools, performance of Gr.12 Physical Sciences learners is still undesirable schools

Q12 Respondents were requested to state whether their schools have videos.

TABLE 12.

RESPONSES	FREQUENCIES	%
YES	1	12.5
NO	7	87.5
TOTAL	8	100

In Table 12, the researcher realised that 12.5% of respondents indicated that they have videos in that schools and 87.5% of respondents indicated that they do not have videos in their schools. Researcher realised that resources like are very important in order to teach Physical Sciences effectively. Researcher realised that unavailability of resources like videos, is contributing towards Gr.12 Physical Sciences learner's poor performance.

Q13 Respondents were requested to indicate the number of Physical Sciences classrooms which are there at their schools.

TABLE 13

RESPONSES	FREQUENCIES	%
1	8	100
	0	0
TOTAL	8	100

In analysing the data in table 13, the researcher found out that 100% of respondents indicated that they have only one Physical Sciences classroom in their schools. The researcher realised that all the schools in the Sekgosese East have one Physical Sciences class. The researcher realised that there is a serious shortage of Physical resources in Sekgosese East schools. The researcher realised that shortage of class rooms contributes to poor performance of Gr.12 Physical Sciences learner's performance.

Q14 Number of Physical Sciences teachers which are there in the respondents schools.

TABLE 14.

RESPONSES	FREQUENCIES	%
1	3	62.5
2	5	37.5
TOTAL	8	100

In Table 14, the researcher found out that 62.5% of the respondents indicated that that their schools have only one Physical Sciences teacher whereas 32.5% indicated that they have two Physical Sciences teachers. The researcher realised that Physical Sciences teachers are working under strenuous condition. They are overburdened by work as they are destined to teach Physical Sciences in all grades of their schools. The researcher realised that shortage of Gr.12 Physical Sciences teachers overloading Gr.12 Physical Sciences teachers and as such they work under stressful conditions that lead to poor performance in Physical Sciences.

Q15 Respondents were requested to state the number of times in which Physical Sciences Subject Advisor had visited their schools in the last two years to assist them.

TABLE15.

RESPONSES	FREQUENCIES	%
1X	0	0
2X	1	12.5
3X AND MORE	2	25
NEVER	5	62.5
TOTAL	8	100

In Table 15, the researcher found out that 12.5% of respondents indicated that the Subject Advisor visited their schools only once in the past two years.25% of the respondents indicated that the subject advisors visited their school three times and more whereas 62.5% of respondents indicated that the subject Advisor never visited their schools in the last two years. Subject Advisors can help a great deal if they visit schools in order to assist teachers and learners.

Researcher realised that performance of Gr.12 Physical Sciences is consistently very low because Subject Advisors are not doing enough.

Q16 Respondents were requested to state whether their schools conduct Gr.12 Physical Sciences morning studies.

TABLE 16

RERSPONSES	FREQUENCIES	%
YES	7	87.5
NO	1	12.5
TOTAL	8	100

In Table 16, Researcher found out that 87.5% of the respondents indicated that their schools conduct Gr.12 Physical Sciences morning studies and 12% indicated that they do not conduct Gr.12 Physical Sciences morning studies. Researcher realised that although morning studies is conducted, performance of Gr.12 Physical Sciences learners still lacking much to be desire.

Q17 Respondents were requested to state whether their schools conduct afternoon studies.

TABLE 17

RESPONSES	FREQUENCIES	%
YES	6	75
NO	2	25
TOTAL	8	100

In Table 17, the researcher found out that 75% of respondents indicated that their schools conduct afternoon studies whereas 25% of the respondents indicate that do not conduct afternoon studies. Researcher realised that afternoon studies is being conducted very seriously and optimally schools in the Sekgosese East Circuit. Researcher however realised that even thou afternoon is being conducted in Gr.12 Physical Sciences classes; Performance of Gr.12 Physical Sciences is poor.

Q18 Respondents were requested to state whether their schools have organised Saturday.

TABLE 18

RESPONSES	FREQUENCIES	%
YES	4	50
NO	4	50
TOTAL	8	100

50% of the respondents indicated that they have Physical Sciences Saturday lessons in their schools, whereas 50% of the respondents indicated that their schools do not conduct Gr.12 Physical Sciences Saturday lessons. Researcher realised that attendance of Gr.12 Physical Sciences Saturday lessons is not satisfactory.

Q19 Respondents were requested to indicate if their schools have official organised vacation lessons.

TABLE 19.

RESPONSES	FREQUENCIES	%
YES	2	25
NO	6	75
TOTAL	8	100

In Table 19, the researcher found out that 75% of the respondents indicated that indicated that their schools do not have organised Saturday lessons and 25% of the respondents indicated that they have organised Saturday lessons in their schools. The researcher realised Saturday lessons are not conducted in the Sekgosese East circuit. The researcher realised that performance of Physical Sciences learners remains low because learners are not attending Saturday lessons.

Q20 **Respondents were requested to indicate the number of times Physical Sciences Subject Advisor had visited their school to help Physical Sciences teachers and learners.**

TABLE 20

RESPONSES	**FREQUENCIES**	**%**
1X	2	25
2X	0	0
3X AND MORE	1	12.5
NEVER	5	62.5
TOTAL	8	100

In table 20, 25% of the of the principal s indicated that subject advisor of Physical Sciences visited their schools only once,12.5 % indicated the subject advisor of Physical Sciences visited their schools three times and more and 62.5% indicated that Subject advisor never visited their school to give assistance to Physical Sciences learners and teachers. Researcher realised that if the researcher supports teachers and learners, Physical Sciences learners Performance could improve. Researcher therefore realised that performance of Gr.12 Physical Sciences learners remains low because Physical Sciences Subject advisor is not doing his /her work.

Q21 **Respondents were requested to state the number of times Physical Sciences Subject Advisor visited their schools assist to Physical Sciences teachers and learners.**

TABLE 21.

RESPONDENTS	FREQUENCIES	%
1X	2	25
2X	0	0
3X AND MORE	1	12.5
NEVER	5	62.5
TOTAL	8	100

In Table 21, 65.5% of respondents indicated that Physical Sciences Subject Advisor never visited their schools to assist Physical Sciences teachers and learners, 25% of respondents indicated that Physical Sciences Subject Advisors visited their schools only once whereas 12.5% of respondents indicated that Subject Advisor visited their schools more than thrice. Researcher realised that the efforts that the Subject Advisor is exerting is not sufficient to impact good performance in Gr.12 Physical Sciences.

Q22 **Respondents were requested to indicate the type of assistance their Physical Science teachers and learners get from the subject advisors during their visit at their school.**

TABLE 22

RESPONSES	**FREQUENCIES OF RESPONSES**	**%**
EXPERIMENTS	**2**	**25**
MOTIVATION	**1**	**12.5**
NONE	**5**	**62.5**
TOTAL	**8**	**100**

In Table 22, the researcher found out that 25% of the respondents indicated that Subject Advisor helped them by doing experiments during his /her visit at their schools, 12.5% indicated that Subject advisor gave their teachers and learners motivations whereas 62.5% of respondents indicated that their Physical Sciences learners and teachers never receive any help from the Physical Sciences Subject Advisor since he/she never visited their schools to help Gr.12 Physical Sciences learners and teachers. The researcher realised that Physical Sciences learners and teachers are not getting assistance and support from the Physical Sciences Subject Advisor and it is for that reason that Performance of Gr.12 Physical learners is low .

Q23 **Respondents were requested to state whether they agree whether the followings could help to improve Gr.12 Physical Sciences learners Performance.**

TABLE 23.1

RESPONSES	FREQUENCIES	%
A	3	37.5
SD	5	62.5
D	0	0
SD	0	0
TOTAL	8	100

In Table.23.1, Researcher found out that 37.5% of respondents indicated that they agree that remedial teaching can help to improve Gr.12 of Physical Sciences learners' performance and 62.5% of the respondents indicated that they strongly agree that remedial teaching can help to improve Gr.12 Physical Sciences learners' performance. Researcher realised that remedial teaching can help learners who are slow to finish up their syllabus. Researcher realised that remedial teaching is helpful to improve Gr.12 Physical Sciences learner's performance.

23.2 **Respondents were requested to state whether they agree Extra lessons can help to improve Gr.12 Physical Sciences learners' performance.**

TABLE 23.2

RESPONSES	FREQUENCIES	%
A	1	12.5
SA	7	87.5
D	0	0
SD	0	0
TOTAL	8	100

In table 23.2, the researcher found out that 12.5% of the respondents agree that extra lessons can help to improve Gr.12 Physical Sciences learner's performance whereas 87.5% of the respondents indicated that they strongly agree that extra lessons can help to improve G.12 Physical Sciences performance. Researcher realised that extra lessons can help to improve Gr.12 Physical Sciences learners performance. Extra lessons enable learners and teachers to finish syllabi beforehand.

23.4 Provision of relevant resources.

TABLE 23.4

RESPONSES	FREQUENCIES	%
A	3	37.5
SA	5	62.5
D	0	0
SD	0	0
TOTAL	8	100

In analysing data in Table 23.4 the researcher found out that, 37.5% of the respondents indicated that they agree that provisioning of relevant resources can help to improve G.12 Physical Sciences performance whereas 62.5% of the respondents indicated that they strongly agree that Provisioning of Physical Sciences relevant resources can help to improve Gr.12 Physical Sciences learners' performance. Availability of relevant material can help learners to learn with ease. Learners will be having teaching aid and equipments that will assist in the teaching and learning processes of Physical Sciences. The researcher realised that the provisioning of Physical Sciences relevant resources can improve Gr.12 Physical Sciences learners' performance.

23.5 Respondents were requested to state whether they agree if guiding Physical Sciences teachers.

TABLE 23.5

RESPONSES	FREQUENCIES	%
A	1	12.5
SA	7	87.5
D	0	0
SD	0	0
TOTAL	8	100

In Table 23.5, researcher found out that 12.5 % of respondents indicated that they agree that guiding Gr.12 Physical Sciences learners can help to improve Gr.12 Physical Sciences learners' performance and 87.5% of the respondents indicated that they strongly agree that guiding Physical Sciences teachers can help to improve Physical Sciences learners' performance. Researcher realised that guiding of Gr.12 Physical Sciences teachers can help to improve Gr.12 Physical Sciences learners. When teachers are guided, they gain knowledge and subject competency which help them to teach effectively.

Q23.6 **Respondents were requested to ate whether they agree if retention of Physical Sciences teachers can help to improve Gr.12 Physical Sciences learners Performance.**

TABLE 23.6

RESPONSES	FREQUENCIES	%
A	1	12.5
SA	5	62.5
D	2	25
SD	0	0
TOTAL	8	100

In table 23.6, 12.5 % of the respondents indicated that they agree that retention of Physical Sciences teachers can help to improve Gr.12 Physical Sciences learners performance whereas 62.5 % of the respondents indicated that they indicated that they strongly agree that retention of Gr.12 Physical Sciences teachers can improve Gr.12 Physical Sciences learners performance whereas 25% of respondents indicated that they disagree that retention of Physical Sciences teachers can help to improve Gr.12 Physical Sciences learners performance. Researcher realised that retention of Physical Sciences teachers can improve performance of Gr.12 Physical Sciences learners performance. Researcher realised that Physical Sciences teachers are leaving teaching because of poor remuneration and if teachers are not leaving teaching profession, Physical Sciences teachers would be sufficient.

23.7 **Respondents were requested to state whether they agree if students who have text books can simply make notes.**

TABLE23.7

RESPONSES	FREQUENCIES	%
A	1	12.5
SA	2	25
D	4	50
SD	1	12.5
TOTAL	8	100

In Table 23.7, the researcher found out that 25% of the respondents indicated that they agree that students who have textbooks can simply make notes, 12.5% of the respondents indicated that they agree that students who have textbooks can simply make notes, 25% of respondents indicated that they strongly agree, 50% of respondents indicated that they disagree whereas 12.5% indicated that they strongly disagree. Researcher realised that having textbooks does not necessarily mean that learners will be able to make notes.

23.8 Respondents were requested to state whether they agree Conducting Physical Sciences teacher's Workshops and In-service training can help to improve Gr.12 Physical Sciences learners' performance.

TABLE 23.8

RESPONSES	FREQUENCIES	%
A	2	25
SA	5	62.5
D	0	0
SD	1	12.5
TOTAL	8	100

In Table 23.8, the researcher found out that 25% of respondents indicated that they agree that conducting Physical Sciences teachers Workshops and In-service Training can help to improve Gr.12 Physical Sciences learners' performance, 62.5% of the respondents indicated that they strongly agree that conducting Gr.12 Workshops and In-service Training can improve Gr.12 Physical Sciences learners performance whereas.12.5% of respondents indicated that they strongly agree that conducting Physical Sciences Workshops and In-Service Training can help to improve Gr.12 Physical Sciences learners' performance. Researcher realised that conducting teachers Workshops and In-service Training empowers teacher and develop teachers' knowledge in a subject that can make teacher to teach effectively and improves Gr.12 Physical Sciences learner's performance.

Q25 Respondents were requested to indicate the number of Gr.12 Physical Sciences learners who are at their schools this year.

TABLE 25

RESSPONSES	FREQUENCIES	%
53	1	12.5
20	2	25
27	1	12.5
43	1	12.5
13	1	12.5
16	1	12.5
35	1	12.5
TOTAL	8	100

In Table 25, researcher found out that 12.5% of respondents indicated that they have 53 Physical Sciences learners in their schools, 25% of respondents indicated that they have 20 Physical Sciences learners in their schools, 12.5% of the of the respondents indicated that they thy have 43 learners in their schools, 12, 5% of respondents indicated that they have 13 Physical Sciences learners in their schools, 12.5% of respondents indicated that they have 16 learners in their schools and 12,5% of respondents indicated that they have 35 Physical Sciences learners in their schools .The researcher realised that the frequencies of learners doing Physical Sciences in the Eight Sampled Schools is 207 . Researcher realised that the number of learners doing Physical Sciences in the Sekgosese Circuit is too small.

The number of learners is small in such that the Physical Sciences teachers may able to attend learners' problems individually and improve performance of Gr.12 Physical Sciences. Researcher realised that although the number of learners doing Physical Sciences is small, performance of Gr.12 Physical Sciences learners is still very low.

Q26 Respondents were requested to indicate whether they award their Physical Sciences best performers at their schools.

RESPONSES	FREQUENCIES	%
YES	5	62.5
NO	3	37.5
TOTAL	8	100

In Table 26, researcher realised that 62,5% of respondents indicated that they award Gr.12 Physical Sciences best performers at their schools and 37.5% of respondents indicated that they do not award Gr.12 Physical Sciences best performers at their schools. Researcher noticed that Sekgosese high schools award Gr.12 Physical Sciences best performers. The researcher realised that even though schools award Physical Sciences best performers, performance of Physical Sciences learners is still very low.

Q27 Respondents were requested to state whether parents of Physical Sciences learners come to school to motivate Gr.12 Physical Sciences learners.

TABLE 27

RESPONSES	FREQUENCIES	%
YES	2	25
NO	6	75
TOTAL	8	100

In table 27, the researcher found out that 25% of respondents indicated that parents their Physical Sciences learners come to schools to motivate Gr.12 Physical Sciences learners and 75 % of the learners indicated that parents of their Gr.12 Physical Sciences learners do not come to their schools to motivate their Physical Sciences learners. Parents motivation gives learners courage and make them are that their parents support what they are doing.

Q28 Respondents were requested to indicate whether they invite role models and former Gr.12 Physical Sciences students to address their Physical Sciences student at their schools.

TABLE 28

RESPONSES	FREQUENCIES	%
YES	4	50
NO	4	50
TOTAL	8	100

In Table 28, Researcher realised that 50% of the respondents indicated that they invite role models and their former Gr.12 Physical Sciences students to address their Physical Sciences students at their schools and 50% of the respondents indicated that they do not. Researcher realised that schools in the Sekgosese East Circuit invites role models and former Gr.12 Physical Sciences students to address their Gr.12 Physical Sciences learners at their schools. Researcher realised that although secondary schools in the Sekgosese East Circuit invite role models and former Gr.12 Physical Sciences students to address their Physical Sciences learners, performance of Gr.12 Physical Sciences learners remains undesirable.

4.6 SUMMARY

This chapter focused on data presentations, analysis and interpretations. The data was presented in the form of tables. The data was categorised into two different categories which are personal information and general information.

Personal information is information pertaining to the Academic, Professional qualifications and experiences of the respondents. General information refers to all information as required by data collecting instrument.

CHAPTER 5: SUMMARY, FINDINGS, LIMITATIONS, RECOMMENDATIONS AND CONCLUSION .

5.1 INTRODUCTION

In this chapter, researcher summarised the whole research, discussed findings from the data analysis and literature review, limitation and recommendations were given and Summary of the chapter was also done.

5.2 SUMMARY OF THE STUDY.

Chapter one detailed the background of the study, statement of the problem, research questions, aims of the study, preliminary literature review, significance of the study, design and methodology, validity, reliability, ethical considerations and delimitations of the study.

Chapter two detailed literature review. International and local literature was used. Primary and secondary literature was acknowledged. Some of the literature was also obtained from the internet. The literature consulted was positive with the research problem.

Chapter three was about research design and methodology. The researcher employed Quantitative research approach. Sampling methods (Systematic Sampling Method) was employed to reduce the population into manageable number. Data was collected through the employment of questionnaires in which respondents were expected to cross appropriate answers and Linkert scale was also employed. Validity and reliability of the instrument were discussed and ethical considerations were also detailed.

Chapter four detailed data analysis and interpretations in which data was presented in tables and was interpreted statistically wherein variables and frequencies were reflected in percentages.

5.3 DISCUSSIONS OF THE FINDINGS

Research findings revealed a variety of issues related to poor performance of Gr.12 Physical Sciences learners.

5.3.1 Discussions relating to question one of the research questions: Why are there few students doing Physical Sciences lessons in Gr.12?

For a long time, Career guidance was considered very useful in helping learners to know subjects they should choose for different professions. The subject was taught as one of school subjects and was very helpful to guide learners on how to choose their careers and to know which subjects they should pursue for a particular profession.

Researcher find out that Career Guidance is not effectively taught at schools, instead it is only meant for Gr.12 learners who are about to exit schools and train for different careers. Career Guidance is looked down upon in many schools. Teachers mostly use Career Guidance periods to finish up syllabi of other subjects. It is only in Gr.12 that it is compulsorily taught. In many schools the subject is not even included on the time tables. Career guidance qualified teachers are not even available in some schools and vacancies for Career Guidance teachers are hardly advertised

5.3.2 Discussions relating to question number two (2) of the research questions: Why is Physical Sciences pass rate so low in the Sekgokgose East Circuit? In regard to this question, research discussions touched a variety of issues as explained below:-

5.3.2.1 Teacher qualifications and lack of Physical Sciences teachers is also a big challenge in teaching and learning of Physical Sciences. There is limited number of Physical Sciences teachers who can effectively teach. Most schools have only one Physical Sciences teacher who is teaching Physical Sciences in the FET band (Grades 10 – 12) and Natural Sciences in the GET band (Grades 8-9).Poor teachers are working in a stressful and tiresome situation, since they are expected to teach physical Sciences in all grades. Monitoring, controlling and assessments could not be effectively executed in such a situation and this could emanate into poor performance.

5.3.2.2 The research findings also noticed a serious shortage of Physical Sciences laboratories since most schools are not having Physical Sciences laboratories in which learners can do experiments and laboratory practical works. In the availability well equipped laboratories, learners get excitement and motivation through scientific inquiries, investigations and researches. Learners who have chance to use laboratory in lower grades, develop curiosity and interest on Physical Sciences and this influences them choosing the subject in Gr.10. Unfortunately, most schools do not have well equipped Physical Sciences laboratories.

5.3.4 Discussions relating to research question Three (3) of the research questions: What strategies are currently on place to improve Physical Sciences results? Discussions revealed that the Department of Education is doing its best to address poor performance in schools. On this line, research discussions disclosed a variety of strategies which are on use. The Department of Education employed Subject Advisors to assist Physical Sciences teachers and learners in problematic areas. Even in the presence of these Subjects advisors, performance in this subject still lack much to be desired. Discussions also revealed that school visitations by Subject Advisors to assist Physical Sciences teachers and learners are very minimal or they are not done at all. Although subject advisors are employed, performance of the subject in question is still dominantly low.

5.4 CONCLUSION

Researcher learned a number of things in this research and concluded in the following ways: - Learners are not getting enough motivation that encourages them to enroll Physical Sciences. That was after the researcher discovered that a limited number of learners are enrolling for Physical Sciences in Gr.12. This is because there is no subject orientation in Gr.8 and 9 to guide learners when choosing streams in Gr.10.

School Management Teams (SMTS) are also not doing enough to motivate these learners to choose Physical Sciences. Schools are not inviting former Gr.12 Physical Sciences students and other Science role models to come to schools and address learners on how important Physical Sciences is in real life situation and job opportunities. Schools are not rewarding Physical Sciences good performers to motivate lower grades learners to develop interest on Physical

Sciences. Parents' educational status plays a negative role, since they are not educated and they cannot help their children with curriculum related matters.

Researcher noticed strategies that Department of Education employed to improve Physical Sciences performance and realised that it is doing its best. Constructions of class rooms and laboratories, establishment of the *Dinaledi* schools, the no fee school policy (Quintile system), teacher development programmes, teacher training bursaries, employment of Physical Sciences foreign teachers and the employment of Physical Sciences Subject Advisors are remarkable commitments.

5.5 LIMITATION OF THE STUDY

Although permission was obtained from the Circuit Manager and pre-arrangements were done with school principals to convenient the respondents, minor challenges were encountered as learners were busy with common tests during the arranged time. However, the researcher arranged for convenient time and data was successful collected.

5.6 RECOMMENDATIONS

The researcher categorised recommendations into two, namely: - recommendations relating to research questions and recommendation for further studies.

5.6.1 RECOMENDATION RELATING TO RESEARCH QUESTIONS

After thorough discussions on the findings, researcher came up with the following recommendations:-

5.6.1.1 Recommendation relating to question one of the research questions: Why are there few students doing Physical Sciences in the Circuit?

In order to pull more students in taking Physical Sciences, the researcher recommended that principals and their school management teams should ensure that career guidance is not only taught in Gr.12 but should also be effectively taught in lower grades to prepare learners to make proper career subject choices. Teaching Career Guidance gives learners chance to know the importance of Physical Sciences in broadening up their chances of career choices.

5.6.1.2 In connection with research question two, researcher recommended that school principals and their management teams should arrange fund raising strategies and ask donations from various companies and businesses to make funds in order to purchase laboratory apparatus necessary for Physical Sciences.

5.6.1.3 In as far as question three is concerned, researcher recommended that school principals should make arrangements with the Subjects Advisors to ensure that they includes their schools in their itineraries of schools they should visit and also make special arrangements for hands on with Physical Sciences and teachers and learners at schools.

5.6.2 RECOMENDATION FOR FURTHER STUDIES

For further studies, researcher recommended that research could be conducted on "the extent in which Physical Sciences Subject Advisors work to improve Physical Sciences performance."

5.7 SUMMARY

In this chapter, the followings were detailed: - summary of the study, discussions of the findings, research conclusion, limitation of the study and recommendations.

BIBLIOGRAPHY

African National Congress. (1994). **A Policy Framework for Education and Training.** Education Department. Pretoria: African National Congress publication.

Arnott, A., Kubeka, Z., Rice, M. and Hall, G. (1997). **Mathematics and Science Teachers:** Demand, Utilizations, supply and training in South Africa. Edusource 97/01. Johannesburg: The Education Foundation.

Barlia, L. Beeth, M.E. (1999).**High school Student's Motivation to Engage in Conceptual Change Learning in Science**. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Boston, MA. March 28, 1999.

Behr, A.L. (1988) **Empirical Research Method for the human sciences** (2nd Ed). New York: Saracuse University Press.

Brandly, J.D., Brand, M. & Markwell, A.J. (1989).**Curriculum Development in Secondary Schools:** The role that Science Teachers Can Play. Educamus 35(1):20-23.

Burns, N. and Groove, S.K. (2000).**The practice of nursing Research, Conduct Critique and Utilisation.**Philadelphia: WB Sanders &Company. Pp.235 -248.

Cawood, J. and Gibbon, J. (1981).**Educational Leadership**: Staff Development, Johannesburg: Nasouw Limited.

Department of Education (1998) **Education Employment Act (EEA)** Section 76.

Department of Education (2005). **Physical Sciences – National Curriculum Statement Grade 10 – 12:** Learning Program Guideline.

De Vos, A.S.2002 (2nd Ed).**Research at Grassroots**. Pretoria: Van Schaik.

Garrat, A.M., Ruta, D.A. Buckingham, J.K. and Russel, I.T. (1993).**The SF36 Health survey Questionnaire:** An Outcome Measure suitable for routine usage within the national Health system pp.40-44.Goddard, W. & Staurt, M. (2001).**Research Methodology:** An Introduction. Lansdowne: Juta & Co. Ltd.

Hanrahan, M. (1998).**The Effect of Learning Environment Factors on Students' Motivation and Learning:** International Journal of Science Education, 20(6), 737-757.

Hudson, D. (1993). **Rethinking old ways: Towards a more critical approach to practical work in School Science.** Studies in Science Education, 22, 85-142.

Khan, M. & Rolinick (2000) **Science Education in the new South Africa**: Reflection and Vision, International Journal of Science Education 261-272.

Klopfer, L. & Champagne, A. (1990).**Choice of Crisis as Science Education**, 74(2), 133-154.

Limpopo Department of Education 1995/1996 **White paper on Education.** Pretoria.

Limpopo Province **Government: Department of Education Citizens Report (2005-2006).** Polokwane: Department of Education.

Lumsdem, L. (1989). **Teacher's Morale** 120:16 – 19.

Monobe, R.L. (1995). **Transformation in teaching and training**: The Challenges of Institutions in Producing Teachers in Scarce Subjects, SASE 95 Conference proceeding.

Nachmias &Nachmias.1997 (5th Ed)**: Research Methods in Social Sciences.** London: St.Martin's Press Inc.

Polit, D.F. & Hungler, B.P (1993).**Nursing Research**: Principles and Methods. Philadelphia.

Rudenstam, K.E. & Newton, R.R (1992)**.Surviving your dissertation: A comprehensive guide to content and process**. London: SAGE Publication.

Rutherford, M. and Watson,P. (1990).**Selection of students for Science courses**. South African Journal of Education 10 PP.353-359.

Segall, R. Kotecha P., (1993). **Current institutional forms of Academic Development in the Transvaal and the Orange Free State**: Paper presented at the 1993 SAAD National Conference: University of the Western Cape.

Shutter and Shooter (2003) **Understanding OBE and the New Curriculum**: Pietermaritzburg.

Sirestarajah, K. (1994).**Improvisation as a strategy for teaching of Physical Science in Venda with reference to teacher training**. Unpublished MED dissertation, UNISA.

Strauss, J. & Myburg, C.P.H. (2001) **Research Methodology Study Guide**, RAU.

Sunday Times, 30 September 2007: Sunday Times Publication.

Tobin, K., Kahle J.B.and Frazer, J.B and Frazer, B.J (1990): **Windows into Science classrooms:** problem associated with higher –level cognitive learning. London: Falmer Press.

Watt, M & Bentley, D (1989): **Learning and teaching in school Science**: Practical alternatives. Philadelphia: Open University Press

www.capegateway.gov.za

Yearly, S. (19991).**Science, Technology and change**. London: Academia.

Zaaiman, H. (1998). **Selecting students for Mathematics and Science**: The Challenge Facing Higher Education in South Africa. Pretoria: HSRC.

APPENDICES

APPENDIX A.

RESEARCH QUESTIONNARES: SCHEDULE A

TO BE COMPLETED BY GRADE 12 PHYSICAL SCIENCES LEARNERS

Answer all the questions that follow by putting across (X) next to the relevant block or write your answer on the space provided.

Example: Your gender if you are a male is:

Male	1 X
Female	2

SECTION A: PRSONAL INFORMATION

1. Your gender

Male	
Female	

2. your age

15-17 year	
18-20 years	
21-25 years	
26 year and more	

SECTION B: GENERAL INFORMATION.

3. For how many times are doing Gr.12.

Male	1
Female	2

4. Type of school per curriculum

Science stream	1
Multi stream	2

5. Your highest academic qualifications.

N2	1
Grade11	2
Other	3

6. Does your school have enough relevant Physical Sciences textbooks?

Yes	1
NO	2

7. How often do you use Physical Sciences textbooks in the class?

Always	1
Seldom	2
Never	3

8. Does your School have a laboratory?

Yes	1
NO	2

9. Does your teacher use overhead in Physical Sciences classes?

Yes	1
No	2

10 How many times did you conduct Gr.12 Physical Sciences experiments in the laboratory this year?

1X	1
2X	2
3X	3
4X	4

11 How often do you write Physical Sciences classworks?

Once a week	1 .
Twice a week	2
Sometimes	3
Everyday	4
Never	5

12 How often does your teacher gives you work to do at home?

Once a week	1
Twice a week	2
Some times	3
Everyday	4
Never	5

13 Does your teacher mark classworks with you in the class and give you a feed-back?

Yes	1
No	2
Sometimes	3

14 Do you attend Physical Sciences compulsory Gr.12 Physical Sciences morning studies at your schools?

Yes	1
No	2

15 Do you attend compulsory Gr.12. Compulsory Physical Sciences afternoon studies?

Yes	1
No	2

16 Do you have an official organized Saturday Physical Sciences classes at your school?

Yes	1
No	2

17 Do you have an official organized vacation e.g. winter classes / lessons?

Yes	1
No	2

18 How many times Physical Sciences periods do you have in a week.............

19 Does your school participate in National Science Olympiads?

Yes	1
No	2

20 Do you agree that the followings can help to improve Gr.12 Physical Sciences student's performance? Answer the questions by putting a cross (X) next your correct answer.

SA= Agree.

SA=Strongly Agree

D = Disagree

SD= Strongly Disagree.

	A	SA	D	SD
20.1.Remedial teaching				
20.2.Extra lessons				
20.3.Saturday and vacation lessons				
20.4.Provisioning of relevant resources				
20.5.Guiding Physical Sciences teachers				
20.6.Retention of Physical Sciences teachers				
20.7. Students who use textbooks can simply make notes.				
20.8.Conducting Physical Sciences teachers workshops				

21 What are your parent's highest academic qualifications?

Primary level	1
Secondary level	2
College	3
Technical	4
University	5
Don't know	6

22 Do your parents assist you in your Physical Sciences homeworks?

Yes	1
No	2

23. Do your parents help you to revise physical Sciences classworks?

Yes	1
No	2

APPENDIX B. RESEARCH QUESTIONAIRE: SCHEDULE B

COMPLETED BY GR.12 PHYSICAL SCIENCES EDUCATOR

Answer all the questions that follow by putting a Cross (X) next to the relevant block or write your answer on the space provided.

Example: Your gender if you are a male is:

Male	1
Female	2

SECTION A: PERSONAL INFORMATION

1 Your age.

20- 25	1
26- 30	2
31- 40	3
41 and more	4

2 Your gender.

Male	1
Female	2

SECTION B: GENERAL INFORMATION

3 Your highest academic qualifications.

STD 10	1
BSc	2
BSc Agric	3
MSc	4
Others	5

4 Your highest professional qualifications.

PTD	
STD	
UED	
HED	
HONOURS	
MASTERS	
OTHERS	

5 What is your specialization in Physical Sciences?

Physics	1
Chemistry	2
Physics and Chemistry	3
General Sciences	4
Natural Sciences	5

6 For how long have you been teaching Physical Sciences in Gr.12?

1-5 years	1
6-10 years	2
11-15years	3
16 years and above	4

7 Number of learners in your Gr.12 Physical Sciences class.

1-20	1
21-40	2
41-50	3
51 and more	4

8 Are you satisfied with the remuneration that you are getting as a Physical Sciences educator?

Yes	1
No	2

9 How many Bachelors & Diplomas did you produce in Gr.12 Physical Sciences last year?

Bachelor	
Diploma	

10 What is the average percentage that you produce last year in Gr.12? ....

11 How many times did you attend in – service training (INSERT) in Physical Sciences in the last two years?

1x	1
2x	2
No times	3

12 Does your school have a laboratory?

Yes	1
No	2

13 Does your school have enough laboratory equipments?

Yes	1
No	2

14 Do you use over-head projectors in your Physical Sciences lessons (classes)?

Yes	1
No	2

15 Do you use videos in Physical Sciences class as a teaching aid / tool?

Yes	1
No	2

16 How often do you conduct Physical Sciences experiments in the laboratory?

Once a week	1
Twice a week	2
No time	3

17 How often do you use Physical Sciences textbooks in the class?

Always	1
Seldom	2
4 an more	3

18 How many Physical Sciences homeworks do you give your learners?

1	1
2	2
3	3
4 and more	4

19 How many Physical Sciences classworks do you give your Physical Sciences class in a week?

20 Do you mark learner's homeworks with your learners and do corrections with them?

Yes	1
No	2

21 Does your school conduct Gr.12 Physical Sciences morning studies?

Yes	1
No	2

22 Does your school have Gr.12 .Physical Sciences morning studies?

Yes	1
No	2

23 Are there some compulsory afternoon lessons for Physical Sciences students in your school?

Yes	1
No	2

24 Does your school have official organized Saturday lessons?

Yes	1
No	2

25 Do you agree that the followings can help to improve Gr.12 Physical Sciences performance?

Answer by putting a Cross (X) next to relevant answer

A = Agree

SA=strongly agree

D=Disagree

SD= strongly disagree

		SA	D	SD
25.1 Remedial teaching				
25.2 Extra lessons				
25.3 Saturday and vacation lessons				
25.4 Provisioning of relevant resources.				
25.5 Guiding Physical Sciences teachers.				
25.6 Students who have Textbooks can simply make notes.				
25.7 Conducting Physical Sciences teachers workshops and In-Service training				

APPENDIX C

RESEARCH QUESTIONNARES: SCHEDULE C

(COMPLETED BY PHYSICAL SCIENCES SUBJECT ADVISOR)

Answer all the questions by putting a cross (X) in a block next to your relevant answer or your answers on the space provided.

For example: your gender if you are a male is:

Male	1
Female	2

SECTION A: PERSONAL INFORMATION

1 Your age

20 -30 years	1
31 -40 years	2
41 -50 years	3
51 years and more	4

2 Your gender

Male	1
Female	2

SECTION B: GENERAL INFORMATION

3 What are your highest academic qualifications?

STD 10	1
Degree	2
Honours	3
Masters	4
Others (Specify)	5

4 What are your highest academic qualifications?

PTD	
STD/ HED	
Degree / BSc	
Hons (Physical Sciences)	
Masters	
PHD	
Others (Specify)	

5 For how long have you been working as a subject advisor?

1 -5 years	1
6 – 10 years	2
11 – 15 years	3
16 -20 year	4
21 year and above	5

6 Your specialisation in Physical Sciences?

Chemistry	1
Physics	2
Physics and Chemistry	3

7 Do all secondary school in the Sekgosese East ?

Yes	1
No	2

8 Do all secondary schools in the Sekgosese East circuit have relevant Physical Sciences textbooks?

Yes	1
No	2
Don't know	3

9 Do all secondary schools in the Sekgosese East have relevant enough Physical Sciences laboratory equipments?

Yes	1
No	2
Don't know	3

10 Do all secondary schools in the Sekgosese East circuit have electric supply?

Yes	1
No	2
Don't Know	3

11 How many times in the last two years did you visit Sekgosese East secondary schools to assist Physical Sciences teachers and learners?

1X	1
2X	2
3X and more	3
Never	4

12 What type of assistance did you give to the Physical Sciences teachers and learners during your visit at Sekgosese East circuit schools?

----

13 How many times in the last two years did you organize Physical Sciences In –Service Training in Sekgosese East Circuit?

1X	
2X	
3X and more	
Never	

14 Do you agrees that the following can help to improve Gr.12 Physical Sciences students Performance.

A = Agree

SD = Strongly Agree

D = Disagree

SD = strongly disagree

	A	SA	D	SD
14.1 Remedial teaching				
14.2 Extra lessons				
14.3 Saturday and vacation lessons				
14.4 Provision of relevant resources				
14.5 Guiding Physical Sciences teachers				
14.6 Retention of Physical Sciences teachers.				
14.7 Students who have textbooks can simply make notes				
14.8 Conducting Physical Sciences teachers workshops and In- Service training				

APPENDIX D

QUESTIONNARES: SCHEDULE D

(COMPLETED BY THE HIGH SCHOOLS PRINCIPALS.

Answer all the questions by putting a cross (X) on the block next to your relevant answers or write your answers on the space provided.

For example: your gender if you are a male is:

Male	1 X
Female	2

SECTION A: PERSONAL INFORMATION

1 Your gender

Male	1
Female	2

2 Your age in years.

20-30	1
31-40	2
41-50	3
51 and above	4

SECTION B: GENERAL INFORMATION

3 Your highest academic qualifications.

STD 10	1
Degree	2
Honours	3
Masters	4
others	5

4 Your highest professional qualification.

PTD	1
STD	2
UED	3
HED	4
HONOURS	5
MASTERS	6
PHD	7
OTHERS	8

5 Did you specialize in physical Sciences?

Yes	1
No	2

6 For how long have been secondary school principals?

1-5yrs	1
6-10 yrs	2
11-15 yrs	3
16-20yrs	4
21 yrs and more	5

7 How many Gr.12 Physical Sciences learners wrote the last year Physical Sciences exams?......................

8 How many Physical Sciences exemptions did your school produce in the last examinations............?

9 Does your school have a Physical Sciences laboratory?

Yes	1
No	2

10 Does your school have overhead projectors?

Yes	1
No	2

11 Does your school have enough relevant Physical Sciences textbooks?

Yes	1
No	2

12 Do your schools have videos?

No	1
Yes	2

13 How many Gr.12 Physical Sciences classrooms are there in your school?

14 How many Physical Sciences teachers are there in your school?

15 How many times did Physical Sciences subject advisor visited your school to help Gr.12

Physical Sciences teachers and learners in the last two year?

1X	1
2x	2
3X and more	3
Never	4

16 Does your school conduct Gr.12 Physical Sciences morning studies?

Yes	1
No	2

17 Does your school conduct6Gr.12 Physical Sciences morning studies?

Yes	1
No	2

18 Are there some official organized Saturday lessons at your school?

Yes	1
No	2

19 Do you have officially organised vacation lessons in your schools?

Yes	1
No	2

20 How many times did Physical Sciences subject Advisors visit your school to assist Physical Sciences teachers and learners?

1X	1
2X	2
3X and more	3
Never	4

21 How many times did the Physical Sciences subject advisor visit your school to assist Physical Sciences teachers and learners?

1X	1
2X	2
3X and more	3
Never	4

22 What type of assistance did Physical Science Subject advisor give to your Physical Sciences teachers and learners during their visit at your school?

----

23 Do you agree that the following may help to improve Gr.12 Physical Sciences students Performance?

A = Agree

SA= Strongly Agree

D = Disagree

SD = strongly disagree

	A	SA	D	SD
23.1.Remedial teaching				
23.2.Extra lessons				
23.3.Saturday and vacation lessons				
23.4.Provision of relevant resources				
23.5. Guiding Physical Sciences teachers.				
23.6. Retention of Physical Sciences teachers.				
23.7.Students who have textbooks can simply make notes				
23.8. Conducting Physical Sciences teachers workshops and In –Service Training.				

24 Does your school take part in the national Science Olympiads?

Yes	1
No	2

25 Number of Gr.12 Physical Sciences learners in your school this year?

26 Do you award the best Physical Sciences performers at your school?

Yes	1
No	2

27 Do parents come to school to motivate Physical Sciences learners at your school?

Yes	1
No	2

28 Do you invite role models and former Physical Sciences students to address Physical Sciences students at your school?

Yes	1
No	2

APPENDIX E

INQ: RATSHIVHADELO T.A

CELL: 083 7701 884

P.0. BOX 2126

SIBASA

14 August 2010

The Circuit Manager

Sekgosese East Circuit

MOOKETSI

0875

Dear Sir/ Madam

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH IN HIGH SCHOOLS WITHIN SEKGOSESE EAST CIRCUIT.

I Ratshivhadelo T.A of the student number 8700470 of the University of Venda hereby wish to request permission to conduct a research project in high schools within your circuit. I am studying Masters Degree in Education, Curriculum Studies (MEDCS) in which a research is a requirement in fulfillment of the degree. Details of the study are as indicated below:

1. TOPIC: Performance of Grade 12 Physical Sciences students in Sekgosese circuit.
2. SUBJECTS: High school managers, Gr. 12 physical Sciences teachers, Gr. 12 Physical Sciences learners and Sekgosese East circuit Subject Advisors.

I promise to make the findings of this research available to you as soon as they are available.

Hope you will find this in order

Yours Faithfully

Ratshivhadelo T.A

LIMPOPO
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TO: SCHOOL PRINCIPALS AND EDUCATORS WITHIN SEKGOSESE EAST CIRCUIT.

PERMISSION TO CONDUCT M.Ed. DEGREE RESEARCH: MR RATSHIVHADELO T.A. FROM THE UNIVERSITY OF VENDA FOR SCIENCE AND TECHNOLOGY

This serves to inform Principals and Educators that Mr.Ratshivhadelo T.A. from the University of Venda has been granted permission to do research at schools of his choice within Sekgosese East circuit

Kindly assist him wherever is necessary.

Yours truly

Circuit Manager

DEPARTMENT OF EDUCATION
SEKGOSESE EAST CIRCUIT
2009 -[illegible]- 1 4
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