MIDLANDS STATE UNIVERSITY

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL FOUNDATIONS, MANAGEMENT AND CURRICULUM STUDIES

CHALLENGES FACED BY GRADE 6 TEACHERS IN TEACHING COMPETENCE BASED SCIENCE AND TECHNOLOGY IN THE FACE OF THE COVID-19 PANDEMIC IN COWDRAY PARK CLUSTER, REIGATE DISTRICT IN BULAWAYO METROPOLITAN PROVINCE

BY

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A DISSERTATION SUBMITTED TO MIDLANDS STATE UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE BACHELOR OF EDUCATION DEGREE IN PRIMARY EDUCATION.

2021

GWERU, ZIMBABWE

RELEASE FORM

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SIGNED:

YEAR DEGREE GRANTED: 2021

APPROVAL FORM

The undersigned certify that they have read and recommended to the Midlands State University for acceptance a dissertation entitled 'Challenges faced by Grade 6 teachers in teaching Competence Based Science and Technology in the face of the Covid-19 pandemic in Cowdray Park Cluster, Reigate District in Bulawayo Metropolitan Province' by Nyoni Lilian Registration Number R1913823E, submitted in partial fulfilment of the Bachelor of Education Degree in Primary Education.

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Chairperson.....Date….....

DEDICATION

This research project is dedicated to God Almighty for giving me the strength to undertake this venture, and to my husband and family for believing in me.

ACKNOWLEDGEMENTS

First of all I would like to give the praise and honour to the Almighty for walking with me throughout this journey. I would like to express my sincere gratitude to my supervisor for the guidance and support. My deepest and heartfelt gratitude goes to her for her patience, motivation and tough love, without her I would not have made it this far.

I also want to thank the school heads and grade 6 teachers from Cowdray Park cluster schools for their contributions to the study. Special gratitude goes to my parents for the educational foundation they afforded me and to my husband for the prayers, support and encouragement.

To everyone who took part in this research in one way or the other, I thank you.

ABSTRACT

This study was triggered by the challenges faced by upper primary school classes, particularly Grade 6, in teaching Science and Technology using the recently introduced Competence-Based Curriculum. The challenges were exacerbated by the Covid-19 pandemic. The study used a case study design. Purposive and cluster sampling were used for the school heads and Grade 6 teachers respectively. The sample was comprised of four heads of schools and twelve Grade 6 teachers. Data was collected by means of questionnaires and interview guides. Findings of the study revealed marked shortages of resources in the teaching of Science and Technology at Grade 6 level. The teachers were also found to lack computer skills. Another finding was that support was not forthcoming for the teachers. The research then recommended that there should be provision of adequate resources, skills training for teachers as well as the strengthening of support systems to facilitate the effective teaching of Science and Technology using the Competence-Based Curriculum at Grade 6 level

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CHAPTER 1

THE RESEARCH PROBLEM

1.0 Introduction

Chapter one focused on the background to the study, statement of the problem, research questions, and significance of the study, delimitations and limitations to the study.

1.1 Background to the study

In 2017 the Ministry of Primary and Secondary Education introduced a Revised Competency Based Curriculum. This curriculum came about as a way of providing a comprehensive plan for a sustainable transformation of the Zimbabwean education system. The Revised Curriculum has the aim of exposing learners to the disciplines of Science and Technology, engineering, Mathematics and Heritage Studies.

Some of the documents that informed the principles of the Curriculum Framework include the following;

- Narrative Report (2014-2015)
- Presidential Commission of Inquiry into Education and Training (CIET) Report
- Zimbabwean Constitution (2013)
- Education Act (2006)
- Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET) (2013)

Competence Based Education and Training which is an approach to teaching and learning more often used in learning concrete skills than abstract learning, has been identified as the best curriculum that will empower the global community with skilled and competent individuals. It can be deduced that the CBC is a versatile and practical approach to teaching and learning which is very much applicable to the teaching of Science and Technology. This new curriculum brought with it challenges that have not been fully addressed. As if that is not all, here comes Covid-19 further intensifying the challenges of teaching Science and Technology in the Primary School. Rusare (2017), in a research on challenges of the new curriculum, interviewed the head of a school in Harare who revealed that the new curriculum includes content for learners with special needs, but trained personnel to handle such learners

is inadequate. Learners with special needs are neglected and not fully catered for under the new curriculum in schools. Chitiyo and Wheeler (2004), undertook a study and found out that the provision of special education is uncoordinated and disintegrated rendering it almost impossible to hone the services at all levels. Mutepfa et al (2016), published their findings after carrying out a project on inclusive education in Zimbabwe. They revealed that successful inclusive education in Zimbabwe is yet to be a common reality, due to a lack of commitment by policy makers towards learners with disabilities. The new CBC in Zimbabwe does include provisions for learners with special needs but challenges of implementation still exist. This project will therefore seek to investigate these myriad of challenges facing Grade 6 teachers in implementing the Competence Based Science and Technology.

1.2 Statement of the problem

The researcher has noted that the Revised Competence Based Curriculum has brought with it various challenges. These challenges have a bearing on the teaching of Science and Technology at Grade 6 level. Moreover the challenges have been exacerbated by the Covid-19 pandemic which has taken the world by storm. Teachers are struggling to interpret the CBC syllabi. The major thrust underlying the carrying out of this project was to investigate the challenges encountered by Grade 6 teachers in teaching competence based Science and Technology in the face of Covid-19 pandemic in Cowdray Park, Reigate District, Bulawayo

1.3 Research questions

1.3.1 Main research question

- What are the challenges faced by Primary School teachers in interpreting and implementing the competence based Science and Technology curriculum/syllabus in the face of Covid-19?

1.3.2 Sub research questions

- What resources are available for the teaching and learning of Competence-Based Science and Technology at Primary Schools in the face of Covid-19?
- What skills do teachers possess to enable them to teach Competence-Based Science and Technology in the face of Covid-19?
- What support systems are there for teachers as they implement the Competence Based Science and Technology in the face of Covid-19?

1.4 Significance of the study

A number of factors prompted the execution of this study. The researcher was interested in the topic in question because of the buzz around the Competence Based Curriculum. Ruth (2019), contends that adoption of the Competency-Based Curriculum (CBC) brings new trends on the leverage of African education with the rest of the world. Globally the CBC is making waves and all types of researches and studies are being undertaken to investigate one aspect or the other pertaining this type of curriculum. The research intended to bring about awareness and be beneficial to the following stakeholders:

Classroom practitioners- findings of this research are intended to provide this group of people with solutions to some of the challenges in teaching Science and Technology using the CBC.

Policy makers- findings of this study may assist policy makers in formulating interventions and strategies to address the challenges of the CBC.

Curriculum planners- since there is a new normal of living with the pandemic, curriculum planners will need to consider new approaches and methods when planning the curriculum.

Administrators- are the immediate supervisors of the teachers and will be enlightened on the challenges that bedevil the teaching of Competence-Based Science and Technology and thereafter offer the administrative support and assistance required to curb those challenges.

1.5 Delimitations

The study focused on the challenges in teaching Competence-Based Science and Technology in the face of Covid-19 at Grade 6 level in the Cowdray Park cluster, Reigate District.

1.6 Limitations

The researcher faced the following challenges in carrying out an in depth study.

- Financial constraints- As the cost of living continued to soar, the researcher faced limitations in acquiring instruments required for the study. Financial assistance from spouse and some close relatives was sought so as to print the research instruments and to cover other costs pertaining to the research.

- Time- The researcher is a full time practitioner and had other school duties to attend to. Since sporting and other co-curricular activities have been suspended due to Covid-19 restrictions, this scenario was a blessing in disguise for the researcher to gain more time for conducting the research.
- Misinterpretation of questions- participants may misinterpret questions on the questionnaire and thereby affecting the results of the study. To overcome this limitation the researcher carried out a piloting process.

1.7 Definition of key terms

1.7.1 Curriculum

Tanner (1980), defines curriculum as the planned and guided learning experiences and intended outcomes, formulated through the reconstructed outcomes of knowledge and experiences under the auspices of the school, for the learner's continuous and wilful growth in personal and social competence.

1.7.2 Competency Based Curriculum

Amutabi (2019), postulates that Competency Based Curriculum is where learning is based on the needs and potential of individual learners under a flexible framework and parameters that move and shift according to the learners' demands. He further reveals that CBC promotes hands-on training and infuses acquisition of new knowledge through observation, learning as you do, experiential learning and practical experimenting.

1.7.3 Technology

Roblyer (2003), defines educational technology as a combination of the processes and tools in addressing educational needs and problems, with an emphasis on applying the most current tools: computers and their related technologies. He further views educational technology as being double pronged i.e. processes and resources. Processes are the learning activities necessary to attain a learning objective. Resources enhance the learning processes. Technology therefore involves the use of tools by both the facilitator and the learner during the teaching and learning process.

1.7.4 Resources

A resource is defined as an economic or productive factor required to accomplish an activity, or as means to undertake an enterprise and achieve a desired outcome (Saunders and Thornhill,

2012). On the other hand, Stephen (2007), views a resource as a stock or supply of money, materials, staff and other assets that can be drawn by a person or by an organisation in order to function effectively. For the purposes of this study resources refer to all the material, physical and human possessions needed in the teaching and learning of Science and Technology.

1.7.5 Skills

Futurelearn.com (2020), define a skill as a special ability or technique acquired by special training in either an intellectual or physical area. Skills allow the individual to select the most appropriate behaviour or action to suit task requirements. The Merriam Dictionary (1996), give the definition of skill as the ability to use one's knowledge effectively and readily in execution or performance. Skills are the abilities and techniques needed by teachers to achieve the set aims and objectives in the teaching and learning process. More so in the implementation of the CBC in Science and Technology, skills are a prerequisite for facilitators.

1.7.6 Support Systems

American Heritage Dictionary (2016), defines a support system as a network of personal or professional contacts available to a person for practical or emotional support. Support systems can take the form of facilities or structures that have been put in place for supporting teachers. They can also be in the form of persons or personnel in the Ministry of Primary and Secondary Education hierarchies or protocol structure. Support systems are therefore vital in the implementation of the CBC in Science and Technology.

1.8 Summary

Chapter 1 presented the research problem, the background, statement of the problem, research questions, significance of the study, delimitations and limitations of the study as well as definitions of the key terms. The next chapter will focus on literature review.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

In this chapter the researcher focused on literature related to the chosen topic. Challenges of the Competence Based Curriculum in some African countries were reviewed. The review of related literature was structured around the research questions which guide the study.

- Resources available for the teaching and learning of Science and Technology at Primary School level.
- Skills needed by teachers to enable them to teach Competence Based Science and Technology in the face of Covid-19.
- Support systems for Primary School teachers as they implement Competence Based Science and Technology.

Ruth (2019), postulates that currently, due to technological advancement, most countries have opted for a Competence-Based Curriculum (CBC) which appears as worldwide trends in offering skills that match with the requirements of companies' employers. Literature from various sources on challenges of CBC in various African countries like Kenya, Tanzania and South Africa was reviewed.

2.1 Challenges of CBC in Kenya

A number of researches have been conducted in relation with the Competency-Based Curriculum in Kenya. This African country adopted CBC in 2017 and it was hurriedly introduced without adequate preparations and consultations. This is referred to as the Panic Approach of introducing a curriculum framework. UNESCO-IBE in Sithole (2017), describes the panic approach as being caused by a situation where local or international pressures cause rapid decisions to be made to change the curriculum without prior careful and structured planning. Such an approach is marred with many discrepancies. Almost all the challenges that are faced by teachers in implementing the CBC in Kenya can be blamed on this Panic Approach. Lack of adequate and proper teacher preparation was observed. Teachers were not fully equipped for the CBC rendering them ill-prepared and hence they lacked confidence in teaching using the CBC. Teachers are expected to be the facilitators and guides in the teaching

and learning process, therefore their lack of training automatically leads to ineffective lesson delivery in the classroom. The CBC in Kenya is observed as emphasizing learner competences while overlooking competences possessed by teachers. It is impractical to expect teachers to facilitate competence based education when they themselves have not been assessed to check whether they possess those competences. Carla and Vander (2018), propound that for CBC to be effectively implemented the teachers need professional development and capacity building. Teachers were not given specialized training for different learning areas and this impeded the proper implementation of CBC in Kenya.

Ruth and Ramdas (2020), identified a challenge concerning the teaching and learning material for the CBC. They observed that books were poorly printed due to hurried implementation of the curriculum, hence this scenario overstretched the writers and publishing houses. Prior to the poor printing, the books were not edited properly. Another challenge identified in the Kenyan education system is the size of the classes. It was observed that the classes were too large to properly implement the CBC. On the same vein was the shortage of teachers. These factors had a great bearing on the implementation of the CBC in Kenya.

Ruth and Ramdas (2020) discovered that Kenyan teachers found it difficult to assess the learning progress under the CBC. The teachers were used to the summative form of assessment hence the new formative method of assessing learners proved to be complicated. The assessment rubrics on the same note had unclear guidelines making it difficult to give learners appropriate assignments. The CBC was further described as a 'Westernized' curriculum that fits the developed countries and is not suitable for Africa.

On the 7th to the 10th of June 1994, nations of the world met in Salamanca, a city in Spain, to deliberate on special needs education. With the release of the Salamanca Statement, a large number of developing countries started reformulating their educational policies to promote the inclusion of learners with special needs into mainstream schools The Salamanca Statement states that every child has unique characteristics, interests, abilities and learning needs. This point emphasizes the uniqueness of each child. Mercinah et al (2016), contend that every child is unique and different. They have different abilities, learn in different ways and at different paces. Contrary to what the Salamanca Framework advocates, the syllabus for learners with special needs was not distributed to Kenyan schools. Moreover there was no syllabus for the mentally challenged learners hence the CBC did not cater for inclusive education. Ondimu

(2018), supports this observation as he states that diversity of learners with special needs was not catered for.

2.2 Challenges of CBC in Tanzania

In Tanzania some challenges in implementing CBC were observed by several researchers. The Government of that country failed to distribute Primary School teaching and learning materials effectively. Mmela (2006), states that the availability of teaching and learning materials contribute to the practicability of integrated literacy approaches such as Competency-Based approach. Examples of materials that are in short supply in Tanzania include books, papers, Science equipment, classrooms and desks. Still on the same vein, Luwingu (2012), postulates that inadequacy of textbooks is one of the challenges that hinder the implementation of CBC in Primary Schools education. Learner to textbook ratio in some instances is 1:10, thereby impeding the effective implementation of the CBC.

Inadequacy of media defeats the whole cause of the CBC. The cause of the shortage of textbooks is attributed to inadequate funds. To add salt to injury the writers of the textbooks were not well versed in the paradigm of CBC, hence ability to pen appropriate books was limited. Rwezaura (2016), gives some examples of teaching and learning aids to include real objects, models, pictures, textbooks, diagrams, chalkboards, notebooks and charts. Another challenge of note in Tanzania is that teachers were reluctant to use Competency-Based textbooks and other associated materials because this required long hours of lesson preparation. Whenever any new scenario is introduced there is bound to be some resistance at first, after some time people then tend to slowly embrace the new. Sithole (2017), observes that necessary though it may be, curriculum change can face resistance from different quarters. Apparently, the Tanzanian teachers' reluctance was a way of resisting the new CBC as they felt comfortable with the old way of teaching together with the material and textbooks they were used to.

Kafuli (2017) and Kabombwe (2016), have each termed the CBC as a complex curriculum to implement in African countries. They postulate that the curriculum is difficult for Primary School level where learners are still developing foundational skills. Bates cited in Nzima (2016), propounds that CBC leads to vocationalization of general education. Simple and basic concepts are arguable turned into complex concepts further confusing the Primary School learners who are trying to grasp the various learning areas which are sometimes too complicated for their 'little minds'.

2.3 Challenges of CBC in South Africa

Mandukwini (2016) and other researchers undertook studies on the challenges in curriculum implementation in South Africa and made some findings. One outstanding challenge in the South African context is the overload of work. The teachers claimed that there was too much paperwork involved with the CBC. There was poor training of educators hence lack of knowledge. The teachers were observed to be demotivated because of lack of confidence in implementing the curriculum. There were limited resources to meet the school needs. Lack of information leading to communication breakdown between the supervisors and the educators proved to be a huge challenge. The administrators in the schools studied complained of an overload of administrative work. Language barriers hindered the smooth implementation of the CBC as some learners from poor backgrounds did not fully understand English which was the medium of instruction.

Mouton et al (2013), identified challenges in implementing CBC in South Africa to include inadequate training of teachers, inadequate departmental support and guidance. Another challenge is lack of physical resources, teaching and learning support materials. Overcrowded classrooms proved to be a challenge in the effective implementation of the CBC. Teachers also claimed to suffer under the yoke of administrative overload.

2.4 Challenges of CBC in Zimbabwe

Ngwenya (2019), conducted a research on the challenges encountered by Primary School teachers in Bulawayo on the implementation of the Revised Competency-Based Curriculum. He observed a challenge of high teacher: pupil ratio. The ratios ranged from 1:45; 1:48 and 1:56. This implies that teachers were faced with a high number of learners in their classes rendering it difficult to effectively implement the CBC as it is a highly learner centered approach to teaching and learning. Ngwenya (2019), also observed that learners were learning theory only due to shortage of resources like computers. The CBC is meant to be a hands-on approach in which learners are practically involved in learning. Therefore, learning areas such as ICT, Agriculture and Science and Technology are supposed to have practical materials for learners to handle and manipulate. Shortage of resources then proved to be a challenge to the proper implementation of the CBC in the Bulawayo schools that were investigated. Another observation made by Ngwenya (2019), was that teachers felt that some learning areas need specialist teachers since classroom practitioners were not well equipped to teach such subjects as ICT, Mass Displays, Agriculture, etc. Non-provision of expertise proved to be a challenge for effective implementation of the CBC. The implementers' attitude towards the CBC left a

lot to be desired according to Ngwenya's (2019) findings. Teachers felt that the curriculum was ill-planned, imposed and fast-tracked leading to teething problems. The fact that teachers have negative attitudes towards the Revised CBC implies that its implementation might not be as efficient and effective as it should.

Rusare (2017), carried out a survey and identified challenges facing teachers in implementing CBC in both Primary and Secondary schools. The main hurdle identified was lack of teaching materials. Financial constraints were cited as the major reason for the non-availability of resources. A shortage of teaching stuff was another impediment. The study further revealed that the new curriculum did not take into account schools that have inadequate classrooms, such schools practise the hot seating system.

2.5 Resources available for the teaching and learning of CBC in Science and Technology

Resources necessary for the teaching and learning of Science and Technology using CBC include:

1. Financial resources- the importance of finances in the implementation of any curriculum cannot be over emphasized. Funding plays a very critical role in the teaching and learning of CBC Science and Technology.
2. Material resources- these come about due to the availability of the financial resources. Of course some material resources can be acquired from the environment without parting with money but in this 21st century a variety of media which complies with the technological era is procured with the aid of money. All types of material resources are necessary for the Primary School Science and Technology classroom. Material resources can also include infrastructure such as classrooms and Science laboratories.
3. Human resources- these include classroom practitioners, administrators, expert Science teachers and all stakeholders who are involved in one way or the other in the CBC Science and Technology in the Primary School.

Gatt and Zammit (2008), identify a variety of material resources for the teaching and learning of Science and Technology. These are inclusive of textbooks, charts, computers, microscope, interactive whiteboard, chalkboard, globe, world map, thermometer, etc. Despite the importance of material resources for the effective teaching and learning of CBC Science and Technology, it is ironic that most studies done by various researchers across the continent of Africa reveal that the issue of resources is a thorn in the flesh. Resources seem to be always

scarce and inadequate. Such researchers as Kadbey et al (2015), Mufanechiya and Mufanechiya (2020), Rusare (2017), and Badugela (2012) all share the same findings that the lack of resources is an elephant in the room as it is a huge hindrance to the effective implementation of CBC Science and Technology. Kadbey et al (2015), maintain that the majority of the participants in their study perceived the lack of resources as a barrier that has a negative effect on the implementation of the new Science curriculum. On the same vein, Chikasanda et al (2014), ascertain that teachers were restricted by limited resources. They move on to add that lack of resources in schools is a general problem that affects not only the teaching of Science and Technology but all other subjects at all levels of the education system in Malawi. Shortage of classrooms in most public primary schools in Zimbabwe has led to the concept of hot-seating whereby two or more classes share the same classroom, with one class coming in the morning and the other coming in later in the day e.g. from 10:30am or 11:00am. This setup is arguably not conducive for effective teaching and learning. Rusare (2017), purports that financial constraints lead to insufficient textbooks. These textbooks are pivotal in the teaching and learning of Science and Technology. Kasembe (2011), claims that resources for teaching and learning of Science in public schools are inadequate.

Rusare (2017), made findings on the shortage of teaching staff in the teaching of Science and Technology. She further reiterates that understaffing leads to a situation where teachers are overstretched, overloaded and overworked, thereby leading to the ineffectiveness in teaching. A respondent in Rusare's study (2017), observed that the new curriculum is a very noble initiative, but they do not have the human resources and teaching materials to implement it.

It can be deduced then from the above citations that there is a general shortage of financial, material and human resources in the teaching of Science and Technology across the Primary school level education divide.

2.6 Skills possessed by teachers to teach CBC in Science and Technology

There are a variety of skills that teachers should possess in order to be effective facilitators in the teaching of Science and Technology using the CBC. These include critical thinking, creativity, technological skills, technical skills, computer literacy skills etc. Chinangure and Chindanya (2019), assert that any new curriculum should come with a complete package of reskilling teachers to create competence and confidence in implementing new ideas. They add on to say this is to ensure that the proverbial truism 'new wine in old wine skins' does not derail all efforts at the implementation stage. These researchers went on to reveal their findings that

teachers had skill deficiencies in a number of learning areas particularly in Technology. On the same note Ruth and Ramadas (2019), propagate that retraining of teachers should be critical in every curriculum adoption. This implies that before any new curriculum is rolled out, there is need to equip and arm teachers with the necessary skills for the effective implementation of that curriculum. Kasembe (2011), identifies assessment skills as being vital to the implementation of the new curriculum in Zimbabwe. He says the revised curriculum requires teachers to frequently assess their students using assessment methods, such as portfolios, classroom or field observations. Skills are necessary for the implementation of Science and Technology under the Revised CBC. A general cry is that most teachers do not possess all the salient skills necessary for them to effectively implement the curriculum.

2.7 Support systems for teachers to implement CBC in Science and Technology

For any curriculum implementation to be successful, there is need for a very strong support system for the facilitators and users of the curriculum. Teachers need to be supported in order for them to effectively implement curriculum. This is even more significant when a new curriculum has been rolled out. Various studies have proved that any new initiative is seldom embraced instantly. With the introduction of the Revised Competence Based Curriculum in 2017, teachers displayed an array of attitudes towards it. Some studies made findings that teachers were not fully embracing the new curriculum, a major concern being lack of support from curriculum planners and supervisors.

Halasz and Michel in Mufanechiya and Mufanechiya (2020), postulate that Primary school teachers need support in terms of resources, competence development, updating assessment methods and introducing new ways of organising learning. Chinangure and Chindanya (2019), note that difficulties that arose in the implementation of the CBC were as a result of the schools and the Ministry not providing teachers with the necessary financial, material and psychological support. They also observed that teachers' concerns about CBC went unnoticed and hence were not addressed. Shadreck (2013), reasons that teachers require the support of the head of school and other members of staff as they are important in ensuring effective use for the required resources. Chikasanda et al (2014), on the other hand displayed uncertainty in terms of support when they expound that it is not known whether teachers receive any professional support to teach Science and Technology. It can be deduced that generally, support for teachers is lacking as they implement the CBC in Science and Technology.

2.8 Summary

This chapter focused on literature review in terms of challenges faced by African teachers in the implementation of the Competence Based Curriculum. The countries reviewed include Kenya, Tanzania, South Africa as well as Zimbabwe. The literature review was also hinged on the research questions which form the foundation of this study.

CHAPTER 3

METHODOLOGY

3.0 Introduction

In this chapter the researcher discussed the methods of enquiry used. The employed research design was outlined. Reasons for choosing certain methods were discussed. Instruments employed in collection of data were also reviewed. The following aspects were discussed; research design, population and sample, research instruments, data collection procedure and data analysis plan.

3.1 Research approach

This study made use of a qualitative approach to gather data. Burns and Groove (2005), describe a qualitative approach as a systematic subjective approach used to describe life experiences and situations to give them meaning. Amanchukwu (2011), postulates that a qualitative research has to do with collecting, analysing and interpreting data by observing what people do. This approach was utilised to gather non-numerical data and it emphasized on quality and depth of information. This study hence used the qualitative approach because it aimed to explore the behaviour, perspectives, feelings as well as experiences of people concerned with the teaching of Science and Technology using the competency based Grade 6 syllabus. Qualitative was used because it promoted openness and hence encouraged respondents to expand and expound on their responses.

3.2 Research design

Aggarwal (2005), purports that a research design is a detailed outline of how an investigation will take place. Burns and Groove (2003), on the other hand define a research design as a strategic framework for action that serves as a bridge between research questions and the execution or implementation of the research. A research design is therefore the overall plan for obtaining answers to the research questions guiding a study. It can also be viewed as a blueprint for conducting a study. A research design is essentially the framework for the collection and analysis of data. The researcher adopted the case study design. Bromley (1990), defines this design as a systematic enquiry into an event or a set of related events which aims to describe

and explain the phenomenon of interest. Merriam (1988), on the other hand describes a case study as an examination of a specific phenomenon such as a programme, an event, a person, a process, an institution, or a social group. Making use of the case study design assisted the researcher to study respondents' feelings, perceptions and attitudes about specific aspects of the research. Probing respondents also helped to gain a deep understanding of the phenomena under study coupled with observations of the nonverbal gestures during interviews. Dillon (2008), asserts that the greatest strength of a case study is that it offers the benefit of studying a phenomenon in detail and in context, particularly in situations where there are many variables of interest than there are observations. On the downside, as according to Creswell (2009), the weakness of a case study is that it can be very demanding to carry as there is need for in-depth access to case sites. The other setback is that the researcher's own subjective feeling/feelings may influence the result. The researcher therefore carried out the study maturely and was non-biased in order to gather data that is as authentic and undiluted as highly possible.

3.3 Population

Leedy and Ormrod (2010), define population as all possible elements that could be included in a research. Jackson and Mazzei (2012), define population as a group of elements which have one or more similar characteristics in common and are of interest to the study. Population can therefore, be regarded as all members of any well-defined class of people, events or objects. In this research the population was comprised of twenty-eight Grade 6 teachers and four heads from the Primary Schools located in the Cowdray Park cluster under Reigate District Bulawayo.

3.4 Sample

Springer (2010), defines a sample as a subset of a population. The goal of sampling is to produce a sample that has all the characteristics of a population except that it includes fewer subjects than the complete population. Thus a sample refers to individuals selected from the targeted population. The study comprised four Heads of schools and twelve Grade 6 teachers drawn from the selected Primary Schools in the Cowdray Park cluster under Reigate District, Bulawayo. In this study purposive sampling was applied in sampling school administrators, i.e. Heads of schools. This is due to the fact that it is the researcher's judgement to elect the subjects who are rich in the required information. Cohen et al (2007), are of the view that in purposive sampling researchers handpick the cases to be included on the basis of their judgement of the typicality or possession of the particular characteristics being sought. Cluster sampling was

used in sampling the Grade 6 teachers as respondents in the study. The clusters drawn from the population for the study were the Grade 6 teachers, and from these clusters simple random selection was done.

3.5 Data collection instruments

Research instruments are tools used to gather data for a particular identified problem. According to Bryman (2004), research instruments are those tools that the researcher uses to gather the desired data from sampled respondents to represent, interpret and analyse to obtain research findings.

According to Patton (2009), data collection instruments are the nuts and bolts of the study and these must be valid and reliable enough to collect the intended data. In this study interviews and questionnaires were used.

3.5.1 Interview

Ananchukwu (2011), views an interview as a process that involves at least two people in a face to face oral with the aim of wanting to get information from another. Ladwig (2009) defines an interview as a face to face dialogue between an interviewer and an interviewee in order to obtain information on the investigation being carried out. An interview is therefore a data collecting instrument which uses verbal communication in which the interviewer asks questions and gets responses from the subjects or participants. Ball et al (2008) consider interviews as the most effective means of eliciting co-operation from respondents as rapport can be established between the researcher and the interviewee and it may be possible to get in depth information that would be needed in the study. The interview enabled the researcher to obtain information by observing the respondents' comments, facial, body language, gestures, tone of voice etc. These features of an interview give it an edge over other data collection instruments. The researcher used unstructured interviews. In such interviews the questions are open ended and have follow up questions to further clarify an issue. Interviews were conducted with the heads of the schools. The interviews were designed to kick off with simple questions to enable the subjects to be at ease. A smartphone was used to record the interviews.

3.5.2 Questionnaire

Speng (2008), postulates that a questionnaire is that form of inquiry which contains a systematically compiled and organised series of questions that are sent to the sampled

population. A questionnaire is designed based on the research objectives and questions. The researcher made use of questionnaires because they were answered anonymously and therefore respondents gave information without any fear. Questionnaires also afforded the researcher an advantage of obtaining data from different respondents at the same time. Semi structured questionnaires were used in this study. These types of questionnaires are comprised of a mixture of closed and open ended questions as supported by Cohen et al (2011) who purport that the questionnaire will enable the researcher to gather a mix of quantitative and qualitative information. Twelve grade 6 teachers from the four primary schools in Cowdray Park cluster responded to the questionnaires.

Piloting

The researcher carried out a pilot study. This served to gauge the clarity of the questions designed for the questionnaires. After the pilot study, a few changes or alterations were made on the questionnaires.

Validity

Brink (1993), views validity in research as being concerned with the accuracy and truthfulness of scientific findings. The author goes on to clarify that a valid research demonstrates what actually exists and it should actually measure what it is supposed to measure. Thakur (2020), purports that validity relates to the appropriateness of any research value, tools and technique and process including data collection and validation. It also establishes the soundness of the methodology, sampling process, data analysis process and the conclusion study. The validity of this research was established through collecting data from the Grade 6 teachers because they are the ones on the field and are teaching Science and Technology using the Competence-Based curriculum. This was evidenced by their schemes of work which indicated that they are and class timetables.

Reliability

Brink (1993), postulates that reliability refers to the ability of a research method to yield consistent results over repeated testing periods. This implies that a researcher using the same or comparable methods will obtain the same or comparable results every time he/she uses the methods on the same or comparable objects. Reliability, is therefore concerned with consistency.

Validity and reliability were ensured by using two different data collection instruments, i.e. questionnaires and interviews. The researcher also ensured validity and reliability by making use of at least three respondents from each school.

Ethical considerations

The researcher religiously considered ethical principles in order to protect herself and the subjects. Marshall (1998), defines research ethics as the application of moral rules and professional codes of conduct to the collection, analysis, reporting and publication of research subjects. The research ethics provide guidelines for the responsible conduct of educational research.

Informed consent

The respondents were informed about the research. The purpose of the research was highlighted and the researcher also explained to the subjects why they were sampled. The respondents were assured of no harm, anonymity and confidentiality.

Anonymity

Respondents were assured that their names will not appear anywhere in the research study. Likewise they were instructed not to write their personal details on the questionnaires.

Confidentiality

The respondents were assured that all the responses they provided for the research will be treated with the strictest of confidentiality. Only the researcher and the research supervisor will have access to the information.

Protection from harm

Assurance of protection from harm was made to the subjects. No one was be exposed to any risks, both physical and psychological. Human rights were strictly upheld.

Voluntary participation

Although purposive sampling was used, the participants were given the option not to participate if it was against their will. They took part in the study out of their own free will.

3.6 Data collection procedure

This is the process of going into the field to collect data. It involves the process of negotiating acceptance and entry. It is also concerned with the distribution and collection of questionnaires, as well as how the interviews will be conducted.

After acquiring an introductory letter from MSU administration, the researcher sought permission from relevant authorities to carry out the research. The interviews were carried out in a conducive environment. The respondents were given ample time to respond to the questions without being rushed.

Having undertaken the piloting procedure, questionnaires were prepared and delivered to the subjects. The researcher personally delivered the questionnaires and an agreement was then made with the subjects on the date of collecting them back. This flexibility afforded the participants sufficient time to respond to the questions from the comfort of their homes/workplaces or any other setting that was conducive to them. On the date that was agreed upon the researcher collected the questionnaires.

3.7 Data analysis plan

The data collected from the questionnaires and the interviews will be analysed. Ball et al (2008), define data analysis as an active and interactive process of organising, providing structure and eliciting meaning. Data analysis can be simply described as a process of collecting and organising data in order to draw conclusions from it. Data analysis aims at finding meaning in data so that the derived knowledge can be used to make informed decisions on the research topic of interest. Both qualitative and quantitative strategies of analysing data will be implemented. Information from the open ended questions will be presented qualitatively. Data in this regard will be organized into themes, views and practices. On the other hand, responses to the closed questions will be analysed quantitatively using statistics. The profiles of the participants will be organised into such categories as gender, age professional qualifications and work experience. The raw data will be presented in the form of tables, thereafter Microsoft Excel will be used to generate pie charts and graphs.

3.8 Summary

The procedures to be followed in conducting the research have been outlined. The population and sampling procedure were briefly outlined. The research instruments to be used were identified and explained. The procedure was skeletally described and the analysis of the data was also highlighted briefly.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter accounted for data presentation, analysis and discussion of findings. Data was presented after it was collected from subjects who gave their views pertaining the challenges faced by Grade 6 teachers in teaching Science and Technology using the CBC in the face of Covid-19. The analysis was based upon the responses of twelve Grade 6 teachers via the channel of questionnaires and four heads of Primary schools using interviews. The return rate of the questionnaires was 100%. In this chapter, the heads of schools were coded H1 to H4.

4.1 Data presentation

4.1.1 Biographic data

This section presented details of personal data which was considered relevant for this study. The table below represents the biographic data for the 12 Grade 6 teachers and the 4 heads of schools in the Cowdray Park cluster under Reigate District in Bulawayo Metropolitan Province.

4.1.1.1 Sex of teachers and school heads

The findings revealed that females dominated the research, with 67% females and 33% males under the Grade 6 teachers sampled while school heads constituted 100% females.

4.1.1.2 Age of teachers and school heads

66.7% of the teacher participants fell within the 41-50 age group. 16.7% of the teachers ascribed to the 31-40 age group and the below 30 and above 50 age groups both had 8.3%. The heads of schools all subscribed to the over 50 age group. Therefore, the bulk of the participants boasted of a high level of maturity as evidenced by their ages.

4.1.1.3 Academic qualifications

The study sought to find the academic level of the participants**.** Most of the participants hold ‘O’ Level as the highest academic qualification. The reason might be that the minimum requirements for entry into Teacher Primary training colleges is ‘O’ Level, in contrast to the Secondary Teacher training requirement which is ‘A’ Level.

4.1.1.4 Professional qualification

58.3% of the respondents held a Diploma in Education qualification, while 33.3% held a degree. Only one participant held a Certificate in Education (8.3%). All the School heads (100%) boast of a degree, as is required for one to be promoted to headship status. The certificate and diploma qualifications empower teachers with teaching skills, on the other hand degree qualifications equip holders with leadership and administrative skills.

4.1.1.5 Teaching experience

Teachers with 11-15 years' teaching experience constituted 33.3% of the subjects thereby making up the bulk of the participants under the teacher category. The 21-25 years and 26-30 years categories each had 25% participants. The 16-20 years category and the more than 30 years category had 8.3% each i.e. one respondent each.

The school heads all had to their credit more than 20 years of experience in the teaching field, with 1 school head (25%) having more than 30 years' experience, 1 school head (25%) with 26-30 years' experience and 2 school heads possessing between 21 and 25 years' experience. This implies that the school heads had been exposed to numerous scenarios and circumstances which have added more knowledge and expertise to their portfolios.

4.1.2 Resources for the teaching and learning of Competence-Based Science and Technology

Participants were asked to state the resources that were available for the teaching and learning of Science and Technology at Grade 6. Table 4 below illustrates the responses given.

Table 1 Resources available in schools

Resources available	Frequency	Percentage
Textbooks	12	100
Computers	3	25
Charts	6	50
World globe	1	8
Wi-Fi	1	8
Chalk and chalkboard	5	42
Local environment	2	17

Seven different resources were highlighted in the questionnaires. All the respondents indicated textbooks as being available for use in teaching Science and Technology**.**

Similar findings were highlighted by the interviewees who identified some of the resources provided for use. H1 responded by stating that:

We provide manila and markers to enable teachers to produce their own charts according to the syllabus needs. We also have bought a few textbooks in line with the New Curriculum, although they are not adequate for all our learners.

H2 also highlighted the basic resources such as chalk, pens, markers, paste and manila. She also added that:

In the face of Covid-19 we need to ensure that learners practise social distancing therefore we require more textbooks so that the learners do not sit close to one another in order to share textbooks. We really have a challenge because we don't have enough finances to buy the resources.

H4 mentioned textbooks, computers and basic stationery as the resources made available in her school for the teaching and learning of CBC in Science and Technology.

The respondents also indicated the resources that they require to teach Competence-Based Science and Technology. The table below illustrates the responses given.

Table 2 Resources required by teachers

Resources required	Frequency	Percentage
Textbooks	12	100
Charts	10	83
Digital media	2	17
Projectors	3	25
Interactive whiteboard	2	17
Printers	6	50
Videos	4	33
Virtual learning media	1	8

Computers or laptops for teachers and learners	12	100
Microscope	1	8
World map	1	8
Globe	2	17
Thermometer	6	50
Lenses	1	8
Batteries and cells	2	17
Substances e.g. chemicals	1	8

All the twelve respondents to the questionnaires included an ICT gadget in their list, be it desktop computers, laptops or tablets. In their totality, the respondents all included textbooks.

The interviewees on the same vein were probed on whether they were able to meet the demands of resources as requested by teachers and their responses were as follows:

H2 stated that:

It is very difficult to buy all the required resources because learners are not up to date in fees payment. Lockdown has made the situation even worse because we were not collecting income.

H4 also reiterated on challenges of acquiring resources when she said:

We are trying the best we can but it's really a challenge. We cannot meet all the demands as the grade leaders bring their requests for resources. We just tell them to be patient and they should work with what is available. Moreover this school is still under construction, our first priority right now is building a classroom block.

H1- *This is a City Council school and it has very strict protocols on buying materials and the bursar is very strict so we cannot buy everything that is requested by teachers.*

The responses clearly showed that the schools under study still had a long way to go in order to meet the demands of the twenty- first century with regards to resources and media for the teaching and learning of Science and Technology using the CBC. All the respondents indicated that the resources that were needed and yet were not available leaned a lot towards technological tools and gadgets. The responses from the interviewees indicated lack of finances as a hindrance to acquiring the required resources.

4.1.3 Skills for teaching Competence-Based Science and Technology

On the skills possessed by Grade 6 teachers as they teach Science and Technology, the respondents gave the following responses as indicated on Table 6 below:

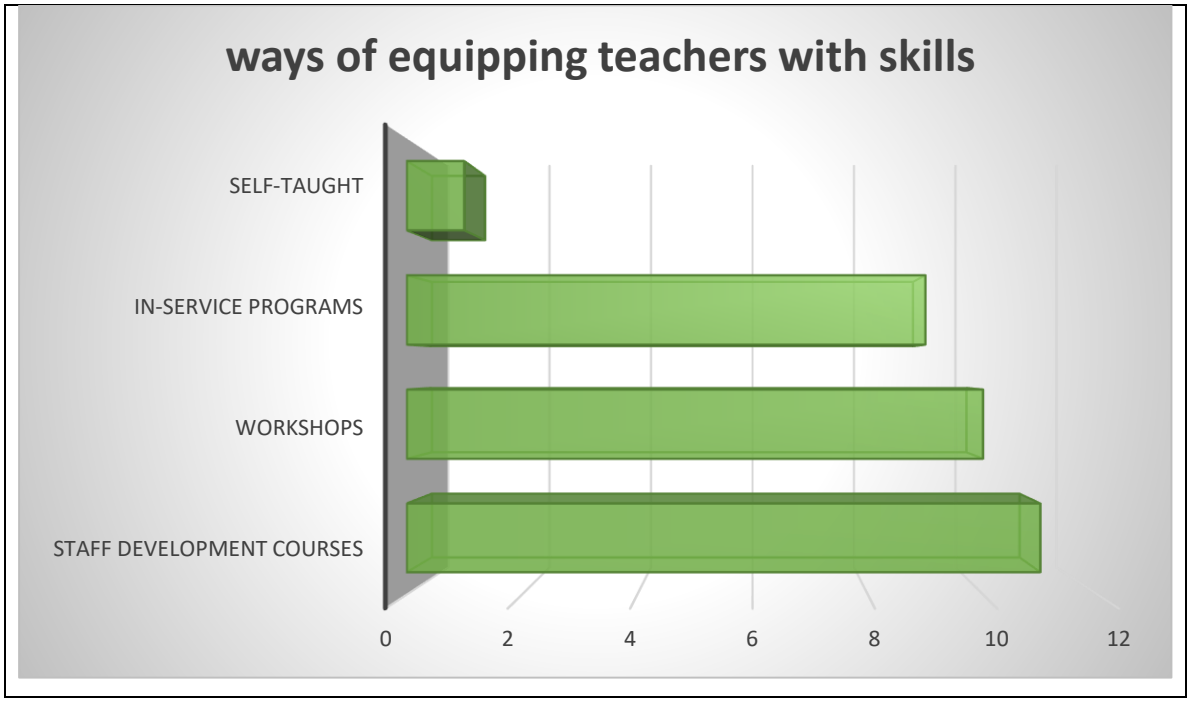
Table 3 Skills possessed by teachers

Skills possessed	Frequency	Percentage
Syllabus interpretation skills	11	92
Lesson delivery skills	12	100
Computer skills	6	50
Assessment skills	12	100
Creativity skills	3	33
Technical skills	1	8
Innovation skills	1	8
Scientific skills	2	17
Communication skills	7	58
Time management skills	8	67
Leadership	1	8

All the respondents possessed lesson delivery skills 50% had computer skills. Only 17% possessed scientific skills, 8% technical skills.

The table below shows ways of equipping teachers with necessary skills as stated by the respondents on the questionnaires.

Figure 1 Ways of equipping teachers with skills



The respondents all listed a type of training in one way or the other. One participant (8%) also mentioned self-taught skills for teachers using such platforms as You Tube.

The Heads of schools had one or two words to say pertaining teacher skills. H1 had this to say:

The qualified teachers underwent training in colleges and therefore they do possess some skills to enable them to teach. However some of them trained several years ago and a lot of developments have taken place since then. This makes it mandatory for such teachers to go for in-service programs to bring them up to speed with what is happening currently.

H2 also mentioned skills that include lesson planning, lesson delivery, creativity and scientific skills.

H3 emphasized the need for teachers to receive training in ICT. When probed further the school head revealed that:

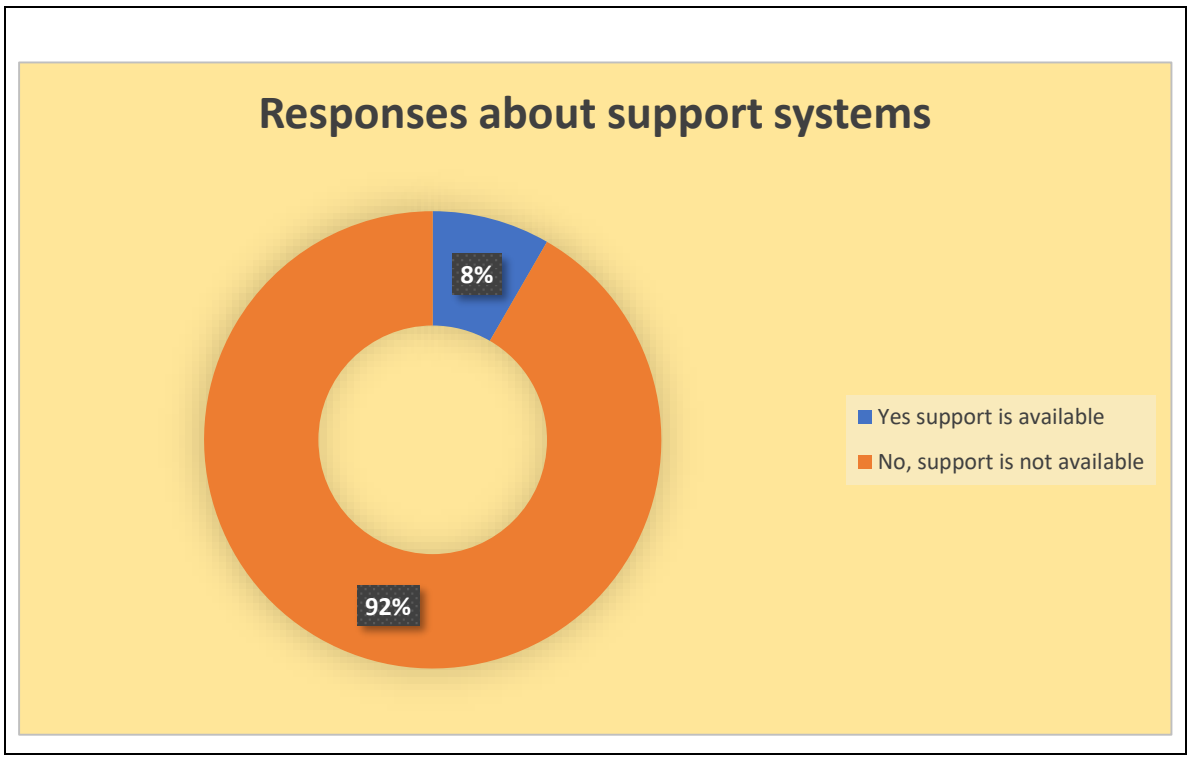
Some four or five years ago the Government provided in-service ICT training for teachers in partnership with Bindura University and a handful of teachers attended the program. However the program was short-lived whilst most of the teachers had not yet benefitted from it.

H4 also listed skills needed by teachers to include creative skills, computer skills, research and technological skills. She also noted that when completing RBM forms teachers are required to indicate skills gaps.

4.1.4 Support systems for teachers as they implement the Competence Based Science and Technology

The participants were asked whether support was made available to them as they implemented the CBC Science and Technology. The diagram below shows the respondents who replied 'Yes, support is available' to the question and those who said 'No there is no support'.

Figure 2 Teacher responses on availability of support



11 out of 12 teachers (92%) who responded to the question on whether support is made available to them as they implement the CBC in Science and Technology responded negatively to the question i.e. they said there was no support and only 8% acknowledged that there was some support from the Administration. This implies that the majority of teachers felt that there was no support rendered to them as they implemented the Science and Technology CBC, while just one respondent believed support was being availed.

Heads of schools were asked about the support systems which are available in schools and they responded thus:

H2- *Support is available to a certain degree*. When probed further she revealed that: *The parents through the SDC are giving us support. Our supervisors are also constantly checking on us via Whatsapp and phone calls, it really means a lot.*

H4- *In this era we should support one another, fanele sincedisane ngoba akula muntu ozabuya evela khatshana to support us (we should help one another because no one is going to come from afar).*

H1- *Organisations such as JF Kapnek, Capernaum; churches like Celebration come in and provide feeding programs as well as paying fees and buying uniforms for the orphans and the vulnerable learners. We are very much grateful for such support.*

When asked whether these organisations support teachers the school head gave a negative response*:*

No, there's no support specifically for teachers.

In as much as the teachers felt there was no support from their administrators, the heads of schools indicated outside sources as availing support to the schools, however upon further probing the researcher discovered that the support was meant for the leaners and not for teachers.

On who or what should support them as they implement Science and Technology at Grade 6 level, the respondents gave the following responses:

Table 4 Sources of support

Source of support	Frequency	Percentage
Government	12	100
School administration	12	100
SDCs	7	58
NGOs	2	17
Donors	1	8
MoPSE	3	25
Parents	8	67

All the respondents included the Government and administration as essential support systems. 67% of the respondents mentioned the parents' body as necessary support.

The interviewees made the following comments as pertaining to support systems.

H3 had this to say:

We are very much aware that teachers need support, we as administrators also need support. The parents do offer support to the school to a certain degree. The SDC should also support by acquiring the necessary tools and resources. Our supervisors need to support us by visiting time and again.

H2 reiterated the same sentiments when she said:

In this era of Covid-19 the administrators, teachers and learners need as much support as can be given. We need support from our Ministry. As a head I should also offer emotional support to the teachers and have an open door policy to listen to any concerns teachers might have.

H4 was not clear at first on who should offer support. After further probing the respondent expressed that the Government, churches, NGOs and parents all had the mandate to offer support to teachers.

H1 shared that the support should come from the administration in the form of providing resources as well as counselling whenever needed.

4.2 Discussion of findings

4.2.1 Biographic data

The findings showed more females than males participated in the study. This could be attributed to the fact that a higher percentage of educationists at primary school tend to be females. The school heads are all females. This factor can be attributed to the National Gender Policy (2013-2017). The Food and Agriculture Organization of the United Nations (2017), reports that the National Gender Policy places strong emphasis on gender equality and equity and envisions a gender-just society in which men and women enjoy equity, and benefit as equal partners in the development of the country. Mareva (2014), claims that a basic tenet of affirmative action is giving preferential treatment to previously disadvantaged groups in society, such as women. In recent years such policies as the National Gender Policy have seen an increase in the number of females taking up leadership positions.

The ages of the participants range from below 30 to above 50. The majority of the teachers fall in the 41-50 age range and this indicates mature facilitators who can be relied upon to tackle challenges and tasks assigned to them in a mature manner. The heads of schools all aspire to the over 50 age group, implying maturity and added to that their leadership roles do require high levels of maturity.

The findings revealed that all the participants held a minimum of a Diploma and the highest qualification was a Master's Degree. This implies that the participants are well versed in the tenets of classroom practise and therefore could be relied upon to respond to questions about the teaching and learning of Science and Technology. The majority of the teachers fell in the 11-15 year experience and this further cements the fact that the teachers are seasoned and are confident in execution of duties.

4.2.2 Resources

It was clear from the responses given that there were inadequate resources and media made available for the teaching and learning of Science and Technology using the Competence-Based curriculum. The list of required resources outnumbered the list of available resources. This indicates a drastic gap and a pronounced shortage of resources in Science and Technology. Textbooks were in short supply in the schools under study. This scenario was exacerbated by the recent introduction of the revised CBC. Jackson (2009), is of the view that there is need to provide adequate resources in the teaching and learning process in order to provide quality education and improve performance. Along the same vein, Stufflebeam (2011), posits that no effective teaching and learning can be achieved with inadequate provision of textbooks since these enhance transmission and acquisition of knowledge. Inadequate textbooks, therefore points to ineffective teaching and learning. Technological resources which align themselves to the digitally inclined twenty-first century were also very much in short supply and in some cases non-existent. Moreover during the now frequent lockdowns, the use of resources that allow for online teaching and learning are being encouraged.

4.2.3 Skills

It can be deduced from the responses from both the questionnaires and interviews that a variety of skills are required by the teachers if they are to effectively implement the Science and Technology CBC. These skills need to be revived time and again. Teachers lacked skills in teaching inclusive classes, they also lacked computer and technical skills among others. Muvirimi (2019), in her study recommended that micro teaching strategy be used to fine tune the teachers skills in teaching in inclusive classes. Learners with special needs should be included in the main stream classes and this requires that teachers be equipped for that. Bigari (2019), identifies twenty five technology skills needed by teachers for the 2020s. among these are producing videos, creating virtual classrooms, securing usage of online technology, assessing learners' work digitally etc. teachers need to upgrade their technological skills if they

are to be relevant in the teaching of Science and Technology in the face of the Covid-19 pandemic. Fort (2017), purports that teachers need computer skills such as word processing skills, spreadsheet skills, database management skills, electronic presentation skills, internet navigation skills etc. all these skills and more will enhance the way teachers deliver lessons I Science and Technology using the CBC. As the findings of the study showed that 50% of the participants possess computer skills, it is mandatory for those who lack the skills to be trained and armoured accordingly.

As was revealed in the research findings, methods of equipping teachers with skills involve training of some sort. The underlying term is 'in-service training'. Dharamshala (2018), instigates that the goal of in-service professional development is to improve the knowledge , skills, and commitments of teachers so that they are more effective in planning lessons, using a variety of effective approaches in their teaching, and monitoring students' learning as well as in undertaking other school and community responsibilities. He further propounds that in-service professional development programs help teachers acquire or deepen their knowledge about subject matter content, teaching skills, and assessment methods required to implement an existing or a new curriculum. The CBC in Zimbabwe is relatively new and hence training should still be on going as a way of familiarising teachers. As indicated in the questionnaires some respondents indicated that they lacked syllabus interpretation skills. In such cases, in-service training comes in handy. All the responses alluded to the need for training for teacher in Science and Technology using the CBC.

4.2.4 Support systems

From the responses given, it was clear that support is an essential component in the teaching of CBC Science and Technology during the Covid-19 era. Ironically that support was not forthcoming as evidenced by the majority of responses from the respondents who denied receiving such. DeAngelis (2012), postulates that psychologists are devising ways to support and retain good teachers, these include developing programs that provide new teachers with academic and social support. It has been scientifically proven that workers who are receiving support at work tend to perform better. Gazprom Marketing and trading claim that a strong support system can strengthen teams and individuals, boost productivity and help overcome challenges. A tight support network is essential if teachers are to effectively execute their duties.

The study further revealed that various players who come into schools render their support mainly to learners. These support systems tend to ignore the teachers, yet they are the ones who are responsible for the same learners being supported. Such organisations as churches, NGOs and voluntary organisations bring support in the form of school fees payment, stationery, textbooks, uniforms, etc. extending support to the teachers as well would boost morale and enhance performance. Support is vital for all teachers inclusive of Grade 6 teachers as they implement the Science and Technology CBC. Lack of support in the workplace is in itself a huge challenge.

4.3 Summary

The major thrust of this chapter was presentation of data collected, its analysis and the discussion thereof. The biographic data of the participants was also presented to show characteristics that had an impact on the study. Skills, resources and support systems as pertaining to the teaching of Science and Technology using the Competence-Based Curriculum in the Covid-19 era were the bone of contention in the study and findings on these concepts were presented. The next and final chapter presents the research findings as well as recommendations.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATONS

5.0 Introduction

This chapter had the principal concern of summarising the findings of the study, drawing conclusions and making recommendations which can mitigate the existing challenges.

5.1 Summary of chapters

Chapter one kicked off by providing an outline of the whole study. The research sought to find out challenges faced by Grade 6 teachers as they implemented Science and Technology using the Computer Based Curriculum in the face of Covid-19. The statement of the problem was revealed. Research questions were clearly stated. Significance of the study as well as definitions of terms also featured in Chapter one.

The major thrust of Chapter 2 was the literature review wherein a cocktail of sources were consulted and documented. These sources included dissertations, articles, peer-reviewed journals, internet sources and several more. The literature was presented under subsections which included challenges of Competence Based Curriculum in other African countries, skills for teaching Science and Technology using Competence Based Curriculum; resources for teaching Science and Technology using Competence Based Curriculum and support systems for teachers to implement the curriculum in Science and Technology.

The researcher chose to employ a case study in order to gather data on challenges faced by Grade 6 teachers as they implement the Science and Technology using the Competence Based Curriculum in the face of Covid-19. The population was grade 6 teachers and school heads from four primary schools in Cowdray Park. The type of sampling used was purposive sampling for school heads and cluster sampling for the teachers. Questionnaires and interviews were used to gather data. From there the data collected was presented in the form of tables and charts as well as narrations of responses from the subjects.

Collected data revealed that there was a need for resources in the teaching of Competence Based Curriculum Science and Technology and these were in short supply in the schools under study. It was also revealed that teachers need skills if they are to effectively implement the Science and Technology Competence Based Curriculum. These skills need to be boosted time

and again and it was revealed that in-service programs are instrumental in equipping teachers with necessary skills. Skills that teachers lacked included computer skills and inclusivity skills. The study further on revealed that there was a lack of support for teachers in schools as they implemented the Competence Based Curriculum Science and Technology. Different groups and organisations were looked up to by the respondents to provide the support. It was revealed that various organisations make their way into schools to render support to learners and not to the teachers.

5.2 Conclusions

Based on the findings of this research it was concluded that a variety of challenges exist in the implementation of the Science and Technology using the Competence Based Curriculum in the face of Covid-19. These challenges hindered the successful implementation of the learning area under study. Some of these challenges can be dealt with at school level, while others need the intervention of higher authorities such as the Ministry of Primary and Secondary Education.

- There were inadequate resources for use in the teaching of Science and Technology. Lack of resources and tools linked with Information and Communication Technology were of highest concern. Financial constraints were the major culprit in the shortage of resources.
- Teachers lacked some technological and computer skills, therefore they become irrelevant for this era which demands wide use of online teaching and learning.
- Teachers named different types of support that they needed and were expecting from administrators and higher authorities.

5.3 Recommendations

Based on the research findings, the following recommendations were made:

- School administration should take measures to provide adequate financial and material resources to facilitate the effective implementation of the Competence Based Curriculum. These should include Information and Communication Technology tools and devices as well as scientific kits.
- Teachers should be trained and equipped with appropriate skills to enable them to effectively implement the Science and Technology Competence Based Curriculum as they do not possess relevant skills.

- Support systems for teachers need to be put in place by the Ministry of Primary and Secondary Education and these to include financial, material and emotional support.

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APPENDIX A

QUESTIONNAIRE SAMPLE GUIDE: TEACHERS

#NB#DO NOT WRITE YOUR NAME ON THIS QUESTIONNAIRE

My name is Nyoni Lilian (R1913823E), a student at Midlands State University undertaking a Bachelor of Education Primary Degree. I am carrying out a study in Cowdray Park Cluster primary schools. I would be thankful if you can spare your time in informing this study by answering the following questionnaire. You are kindly requested to provide honest answers. Please do not write your name since the information you provide will be given utmost confidentiality and will be used for academic and professional purposes only.

RESPOND TO THE FOLLOWING QUESTIONS BY TICKING IN THE APPROPRIATE BOX

SECTION A- PERSONAL DETAILS

SEX ☐ MALE ☐ FEMALE

AGE ☐ Below 30 ☐ 31-40 ☐ 41-50 ☐ Above 50

SECTION B- ACADEMIC QUALIFICATION

'O' LEVEL ☐ 'A' LEVEL ☐

SECTION C- PROFFESSIONAL QUALIFICATION

CERTIFICATE IN EDUCATION ☐ DIPLOMA IN EDUCATION ☐ DEGREE ☐

TEACHING EXPERIENCE IN YEARS ……

SECTION D- Answer the following questions in full sentences

1) Outline the challenges you have in interpreting the Competence-Based Science and Technology syllabus……

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2) How has the Covid-19 pandemic changed the way you teach Competence-Based Science and Technology?

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3) What skills do you need to teach Competence-Based Science and Technology during the Covid-19 era?.....
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4) Name the skills you have that enable you to teach Competence-Based Science and Technology during the Covid-19 era? …….

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5) What do you suggest as a way of equipping Grade 6 teachers with necessary skills to teach Competence-Based Science and Technology during the Covid-19 era? ……
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6) Name the resources or media that are made available for use in the teaching and learning of Competence-Based Science and Technology at Grade 6 level at your school…….....

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7) Name the resources that you need but have not been made available to you as a Grade 6 teacher
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8) Describe any form of support you are receiving from the Administration as you implement the Competence-Based Science and Technology during the Covid-19 era?
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9) What support do you require (but currently unavailable) to be given to you as you teach Competence-Based Science and Technology in the Covid-19 era?

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10) Who should provide the support in No. 9 above?

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APPENDIX B

INTERVIEW GUIDE FOR ADMINISTRATORS

My name is Lilian Nyoni, a student at Midlands State University. I am conducting a research on challenges faced by Grade 6 teachers in teaching Competence based Science and Technology in the face of the Covid-19 pandemic in Cowdray Park cluster in Bulawayo Metropolitan Province. I am kindly requesting your assistance through interview. The information that you are going to give will be used for academic purposes and will also be kept private and confidential. Your assistance is greatly appreciated.

1. Do teachers possess adequate skills to implement Science and Technology Competence-Based curriculum?

2. What can be done to equip teachers with the necessary skills to implement Science and Technology Competence-Based curriculum?

3. Do you provide resources for the teaching and learning of Science and Technology Competence-Based curriculum during the Covid-19 era?

4. How do you become aware of the resources needed by teachers to implement the Science and Technology Competence-Based curriculum during the Covid-19 era?

5. What type of support do you provide to teachers as they implement the Science and Technology Competence-Based curriculum?