

BINDURA UNIVERSITY OF SCIENCE EDUCATION



Exploring progressivism principles that combined science teachers use in teaching form one in two selected schools in Hurungwe District.(A case study)

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Dissertation submitted to Bindura University of Science Education in partial fulfilment of the requirement of the Bachelor of Science Degree in Biology.

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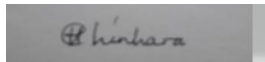
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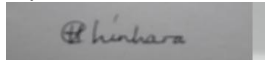
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DECLARATION

I declare that this dissertation has been a result of my original efforts and investigations and such work has not been presented elsewhere for the purpose of degree assessment. Additional sources of information have been acknowledged by means of references.

DEDICATION

This research is dedicated to my son Theophilus Pehliwa and my wife Prisca Kuzvarwaoga a for their support during the study.

ABSTRACT

The researcher conducted a study to examine Progressivism principles combined science teachers use in teaching form one in two selected schools in Hurungwe District as a case study. The study sought to establish the strategies that can be adopted to employ progressive principles in teaching Combined Science at school under investigation. This study was conducted in two secondary school in Hurungwe District. The study used a qualitative research methodology. The study sampled 10 teachers teaching combined science and 20 learners also doing combined science. Specifically it used in-depth structured interviews, observations and Questionnaires to gather data for both learners and teachers. The observations were made in combined science lessons to have first-hand information on how lessons were conducted. Data was analyzed using themes that originated from the gathered data. The study established that there was a lack of appropriate instructional materials, high teacher-pupil ratio, and congested timetable, lack of study time and proximity sub standardised labs in schools. The study recommend that school science laboratories should be sufficiently equipped with laboratory equipment to help accommodate all learners and have all learners in pragmatism. The Ministry of Primary and Secondary Education should articulate a clear policy on inclusion and provide adequate financial support to all the schools to support learners and teachers.

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CHAPTER ONE

1.0 INTRODUCTION

The study investigates some aspects of progressivism teaching methods which are incorporated into Zimbabwe Educational system. Progressive principles in science education can create a dynamic and engaging learning environment that inspires form one learners to explore, discover, and appreciate the wonders of science. The purpose of the introduction is to explain the scope of study stating the problem of the study and highlighting what derived the researcher to conduct his research .The aim will give a statement on what the study intends to achieve guided by objectives. Background of the study will give an overview on the study and other elements which are going to be covered are research questions, assumptions, justification and significance of the study so as to give the reader an insight on what is to come in other chapters.

1.1 BACKGROUND OF THE STUDY

The progressivist approach in education is an idea where exploring one's abilities in the center of the learning activities, focuses on the needs and aim to maximize learner's skill and problem - solving. The idea came from philosopher John Dewey (1938) who advocates that meaningful learning session should include activities that trap into develop social skills and democracy. Williams (2017) argued that most schools today exhibit the traditional of education and noted that Dewey insisted that the young learners are not suited to be under traditional set up. This background shall address some of the issues that drive the researcher to carry out his findings. These include some of the challenges faced to employ progressive principles, nature of progressive methods being used by teachers as well as curriculum progressive context.

1. 1.1CHALLENGES SCHOOLS FACING IN APPLYING PROGRESSIVE PRINCIPLES IN TEACHING FORM ONE COMBINED SCIENCE

The researcher wants to find out that, what challenges schools are facing which might hinder Progress learning of science. There might be teacher resistance to curriculum changes which adopted Progress principles, meagre economic resources or shortage of qualified Science teachers and other challenges.

Teachers are failing to adopt change as a result of curriculum reform policies in many countries which calls for a shift from teacher-centered to learner-centric pedagogy. Du Plessis (2020) objectified that learner centered teaching is a global challenge meaning that a learner-centered curriculum has not been attained in most classrooms. For centuries teachers have been sages on the stage (Schwerdt, Wuppermann, 2011) who, intentionally or unintentionally, silence learners' voices during lessons. In his seminal work Pedagogy of the oppressed Freire (1970) opined that Education is suffering from narration sickness. The teacher talks about reality as if it were motionless, static, compartmentalized and predictable. His task is to fill the students with the contents of his narration – contents which are detached from reality. It appears not much has changed. Teachers continue to pour knowledge into learners' minds. The belief that teachers do not like changing their classroom practices has remained popular up to the present day. According to Weimer (2012), he posted that, human nature is uncomfortable with change . In the same vein, Harris and Graham (2019) found that, teachers are often seen as resistant to change because they prefer rote pedagogy, which is the only teaching methodology most of them are familiar with.

In Zimbabwe, the literature shows that classroom interaction has not changed much since independence in 1980. A study by Chitate (2005) indicates that, although reform policy recommends learner-centered practice, teacher-dominated methods persist in most classes. Mapetere (2013) concluded that the power of the narrative seems to be gripping the teaching of history in Zimbabwe. Chimbi (2018) also established that, despite all the rhetoric about learner-centered pedagogy in Zimbabwe's New Curriculum Framework, chalk-and-talk dominates classroom practice. The current study explores why rote pedagogy seems to persist in Zimbabwe; when reform policy advocates for learner centrism. From the findings of the above scholars, it shows that teachers are still not implementing progressive principles in teaching of combined science hence the researcher wants to find out that, why teachers are not adjusting. If there are some challenges how they can be addressed.

However, some scholars do not share the popular belief that teachers are naturally resistant to change. For instance, Drake and Reid (2018) argue that, in Canada, there is little professional development for teachers; making it difficult for teachers to embrace innovative learner-centered methodologies, as required by policy reforms. In a study conducted in Zimbabwe, Chimbi and Jita (2019) concluded that, it is an overstatement to assume that teachers by nature dislike change and are not willing to acquire new knowledge and skills. They further on argued that, a lack of knowledge and skills make teachers appear resistant to change when, in fact, they need to be empowered with new knowledge and skills to appreciate curriculum change and pedagogical reform. It is clear that teachers need supportive empowerment, what ways can be employed to motivate and empower teachers for progressive learning of combined science.

More so, hindrance of progressive science learning can be shortage of resources such as apparatus, textbooks, desk, and labs among others. The lack of some of these resources in classrooms can cause extreme distress on the students and teachers. Not only are the students and teachers in distress, but they are unable to learn to their fullest potential because they are not being given the proper resources. According to The Commonwealth Institute (2017), Students in high poverty schools do worse on standardized tests, are more likely to be chronically absent during the school year, more likely to be held back in their grade, and less likely to graduate on-time. This goes to show that students in high poverty areas are being extremely affected by the lack of resources. Also Bottiani, J. (2019) argued that teachers stand in front of a class of around 20-30 students a day, and they have to deal with the children themselves, the lesson plan, and the lack of resources. The job itself can already take a toll on them, but if you add the stress of teaching in a classroom with not enough resources, it can lead the teachers to lose their passion. Once this happens, the students are the ones dealing with the consequences and it will be difficult to conduct experiments. From all these assessment, there no way can the teacher conduct experience even if he or she opts to if there is no labs and other apparatus; he will be forced to do lecture method.

Another challenge to science progressive employment is furniture, ranging from poor conditions, inadequate to wrong design desks or chairs. World Bank, (2008) observed that, furniture including desks, chairs, tables and cupboards among others in many countries is either lacking or poor. In some situations the shortage has been described as acute (World Bank, 2008). For instance, in the Fiji islands school furniture was poor and inadequate to the extent that in some schools furniture shortage was acute and students and/or pupils had to sit on the floor (Lingam and Lingam, 2013). In Kenya, many schools in the Nairobi inner-city have inadequate furniture; they are either broken or lost (Dierkx, 2003). This will hinder to organize a classroom set up which favors discussions for democratic learning.

Moreover, inadequate funding of the education sector, coupled with the reduction of quality educators, due to low morale for the remaining teachers, means that quality education and the realization of their true potential is now unattainable for the majority of Zimbabwean school children, particularly in the highest-needs schools. The widening economic crisis in Zimbabwe is contributing to a continuous decline in the quality of education at high-need. Therefore, from my own point of view, there is need to identify the actual resources which are scarce in schools. Do schools have enough resources like apparatus, textbooks and labs and other for them to employ progressivism principles smoothly?

On the other hand, resource's negative contribution to progressive principles teaching and learning process is attributable to the teacher's incompetence or lack of the necessary skills. In reference to another factor, Engin-Demir (2009:23) as cited in Makori and Onderi (2013) argues that ,merely equipping schools with such facilities is not enough to raise student achievement, rather what matters most is whether these facilities are utilized properly. In that connection many studies have reported wide ranging verdicts on teaching and learning resources such as no significant effect, little association, inconsistent, negative or mixed results because they have failed to take care of the aforementioned factors in their investigations. For instance, inconsistent result has been attributable to methodological issues (Wei et al., 2011).

In addition, key variables that make schools successful in educational management are the quality of teachers and learning resources as stressed by Sternberg and Horvath, (1995) Wenglinsky, (2001); Smith and Strahan,(2004) and OECD, (2010). The quality of education not only depends on the curriculum and modern technology but also deeply relates to the quality of teachers who are in the process of implementing the curriculum based on the context of each school. Teachers can design, build, and develop education management that is suitable for the context of the class. Schools and learning methods according to the teachers' practices under the framework of the core curriculum learning standards are defined by the country act as a guideline for classroom management for science teachers (Darling-Hammond and Bransford, 2005; Brown, 2009; McMillan, 2011).It beyond reasonable doubt that some schools if not many has unqualified science teachers who are competent in employing progressive principles, what percentage are they and how can they be staff developed for progressive learning.

From the above arguments, there is need for a strong drive to carry out a research to find out what is actually happening in schools. How these challenges can be addressed since there are conflicting lines of arguments amongst scholarly views?

1.1.2NEW CURRICULUM PROGRESSIVE PRINCIPLES FRAME WORK

Most of the debate surrounding the ongoing curriculum review in Zimbabwe which adopted the experimental, hands on and learner centered for progressive educational system. It is believed that most teachers felt oppressed and being given burdened by the introduction of CALAs as extra work in teaching science. As GoZ (2015) objectifies from their research that, the application of STEAM concept can be practical, involving hands on , projects and experiments to enhance learners problem solving. The researcher therefore wants to find out what progressive principles teachers are using following their curriculum? If they are implanting progressive principles in teaching of combined science form one, how schools are promoting progress?

A study by Babacakova and Bernard (2020) mentioned that most of teachers who participated in a particular research, they are still utilize pictures and videos even in an online session; hence this is supplement the lecture method. Teaching science must address not just the needs but also the challenges that come with it Webber and Miller (2016).The idea about how progressive educators should be applied are rampant, but most educators are not keen on applying these concepts. Nave and Shapiro (2007) highlighted the importance of interdisciplinary approaches in the pedagogy of progressive education; teacher should know how to incorporate the lessons into the real-life situations of the learner, considering their life experiences.

Dewey's influence on the Philippine education system was manifested by the implementation of the K-12 curriculum in the year 2012 (Zahind etal 2012). The study will highlight that inquiry -based learning is the foundation of the utilization of this type of curriculum. Zimbabwe Curriculum Framework 2015-2022 GoZ (2015) adopted these progressivist ideas of reviving, which it defines as the curriculum that addresses the developmental needs of the learners, the community and nation at large.

From the above arguments, lecture method is still employed in most schools though the scale varies from school to school. This research is going to dwell much on how learner-centered approach in being administered in science teaching, do teachers adopt the new progressive learning approach? or they are still practicing the lecture method in teaching science and what can be done to solve the problem. All these questions will then be compacted by the statement of the problem which is the next section chapter.

1.2 STATEMENT OF THE PROBLEM

The study investigator came out with the view that, traditional teaching methods in science education may not adequately prepare students for the challenges of the dynamic world after school. Due to the changing nature of science and technology, there is a need for a more student-centred and inquiry-based approach to teaching science. However, there is a lack of research on how progressive principles can be effectively applied in teaching combined science to Form One students. The use of discussion, experiments, hands on and media had manifested at its own in response to its effectiveness in progress educational system implementation. This study aims to address this gap by examining the effectiveness of using progressive principles in teaching combined science to Form One students and its impact on their learning outcomes and attitudes towards science.

1.3 RESEARCH QUESTIONS

During the study, the researcher will be guided by the following questions:

- * What progressive principles do schools use to promote academic pass rate?
- * Which progressive methods do combined teachers use to promote effective learning?
- * How do schools help teachers to apply progressive principles in teaching combined science?
- * What challenges do schools face in applying progressive principles in teaching combined science?

1.3.1SUB QUESTIONS

- *How can school set up address challenges and opportunities associated with combined science learning?
- *Which collaborative approach and support mechanism can be implemented to foster interdisciplinary connections and enriching overall leaning experiences?
- * How can schools effectively induct science for it to produce critical thinker?

1.4 AIMS OF THE STUDY

The research aims at examining progressive principles that combined science teachers are using in teaching form one pupil.

1.5 OBJECTIVES

To enable schools to:

1) Address challenges and opportunities associated with science learning?

11) Implement collaborative approach and support mechanism can be implemented to foster interdisciplinary connections and enriching overall leaning experiences.

111) Induct science for it to produce critical thinker? Which collaborative approach and support mechanism can be implemented to foster interdisciplinary connections and enriching overall leaning experiences?

1.6 ASSUMPTIONS

The researcher is of the opinion that:

Schools are not using progressive principles in the teaching of combined science at form one levels due to dynamic resources opportunities in schools. Lecture method can affect the child' s education negatively if it is misused.

If progressivism principles are to be used, it should be justified by reference to the fundamental moral principles.

1.7 IMPORTANCE OF THE STUDY

The researcher hopes that the study will help and equip educational administrators; heads of schools, parents, classroom practitioners as well as students with better approach to progressive principles to use in their schools as a way of equip their learners' scientific skills for better future.

Combined Science has become a key tool for imparting scientific skills for learners to fit in their societies and adjust to tentative world dynamic. The quality of education in a country will determine the kind of science and technological development that the society will achieve. This study will focus on examining progressive principles that combined science teachers are using in teaching form one , if there are challenges being faced ,what might be the major causes the major causes and what can be done to mitigate these challenges .

1.7.1 EDUCATION ADMINISTRATORS

They will find the recommendations of this project useful in enlightening schools administrators on the important methods that can be used to improve pass rate in Combined Science at Ordinary Level. The findings of this study will provide information to secondary schools or learning institutions on how best to be prepared in-terms of teaching and learning of Combined Science. This study will advise schools on the basic infrastructural requirements like labs, apparatus and others .This study will also provide information to head teachers on how their administrative support affects employment of Progressivism principles in teaching of combined science.

1.7.2 PARENTS

The findings of this study prepared parents to be involved in their children' s learning. Some parents still have a mind-set that when a child fails, it is always the teachers' fault. It is therefore important that this study will help that appreciate the contribution of other factors in the performance of learners in Combined Science at form one level.

1.7.3 TO THE RESEARCHER

The research will be beneficial to the researcher. This means that the study will expose me a plenty of literature progressive principles that combined science teachers are using in teaching science and what problems are being faced in schools as well as solutions for effective science learning. Most importantly, the research will allow me to fulfil the requirements of my Degree programme.

1.7.4 TO TEACHERS

The research would be of great importance to teachers will benefit most from this research through gaining clue on how to improve progressive principles in teaching combined science, measures that they can take as teachers when there are shortages of recourses and how these principles improves science teaching and pass rate . Also this research will also help since it would shade light on the best teaching methods that can be used, weakness of learners and teachers would be supplied with useful resources like apparatus and text book. UNESCO (2001) is of the view that the teachers are the implementer of the curriculum reforms. Hence the research would be useful to teachers to employ progressivism principles in teaching combined science at form one learners.

1.7.5 TO THE MINISTRY OF PRIMARY AND SECONDARY EDUCATION

The Ministry of Primary and Secondary Education would also benefit since they would be able to establish factors that affect implantation of Progressivism principles in teaching of combined science and poor performance in Combined Science at form one levels especially the practical paper .By so doing this would improve progressive methods in Combined Science country wide since they would have solutions to the problems.

1.7.6 TO OTHER RESEARCHER

The study will be useful as it will provide literature that can be used by other researchers interested in finding factors that affect progressive principles to be practiced in teaching of Combined Science in Zimbabwean schools. The study will also help to close knowledge gaps in the area and open some that can later be filled by others.

1.7.7 DELIMITATIONS

The research will be confined to two schools in Karoi cluster of Hurungwe District .The researcher will be targeting both Form one Level pupils as well as teachers at the school. He will be investigating on what teaching methods are being employed in teaching Form one science.

1.7.8 LIMITATIONS

There might be a number of drawbacks during the research. Some of which had a great impact on the outcome of the research. Some of the problems which may hamper the progress of the research including shortages of resources like money, transport resistance due to fear by some of the participants, sample nature to authentically represent all members exposed to science teaching. Furthermore, the researcher will be committed to his work as a teacher such that the time for research will very little. However since the researcher is aware of all these challenges in conducting his study, he has to improvise for the project to be progressive. In able to accomplish this ,he researcher had to make use of that little time available to him by working during the weekends , source funds from and budget well as well as accepting the outcome of the research.

1.8. DEFINITION OF TERMS

Curriculum - was defined by Chivore B.R.S. (2006) as a logical sequence of learning experiences, geared at developing specific competencies among students. Jarlind (1998) defined it as a written plan of what kind of learning events should be included and how they should be organized.

Experiment- (Zimba, J. (2010) defines it as an operation or procedure carried out under controlled conditions in order to discover an unknown effect or law, to test or establish a hypothesis, or to illustrate a known law. Slater, T.F. et al (2009) also defines experiment as hands on investigation, trial, inquiry, demonstration, examination, observation, assessment, evaluation, appraisal, inspection, analysis, scrutiny, study, probe, trial run, try-out, pilot study, dummy run, dry run, research, experimentation, trial and error, testing

Exploring - is to examine carefully and in detail especially in order to make a diagnosis. It can also be regarded as to go into or travel over for purposes of discovery or adventure.

Progressive principles - John Dewey (1938), defines progressive principles as style of teaching that prioritizes the child's interests, freedom, and self-employment, Learning by doing, discussions, interactive and experiments. Lemke J.L (2001) objectified that the tenets of progressive education include hands-on learning activities, interdisciplinary studies, collaborative learning that build problem-solving and critical thinking skills.

1.9 SUMMARY

The shift from teacher centred to learner centred approach in the educational system is a great challenge in many Zimbabwean schools. The researcher will closely look on how teachers are using progressive principles in teaching of science; do these principles have any bearing on pass rate and academic performance? This research ensures to investigate on how Combined Science is being taught in schools adopting experimentalist ideas, social transformation, democracy, so that pupils will achieve in their education in a supportive learning environment. In the next chapter, the researcher will look closely on what other people think about effectiveness of exploration of progressivism in teaching of Combined Science.

2.0 INTRODUCTION

This chapter seeks to elaborate on how other scholars think about the use of progressive principles in science teaching, their applicability, effectiveness as well as how can they be administered in order to employ maximum academic performance in schools .It also seeks to briefly illustrate the concept of entrepreneurship and competent .Basically competent based curriculum has been widely criticized by most teachers as a burden for them in school systems. The chapter will elaborate on what other scholars discovered on their findings on Progressivism principles methods used in schools, challenges being faced and how schools are promoting progressivism in teaching of combined science form one. Equipping the researcher with this contextual frame work, will guide him to have a picture on the nature of his study.

2.1 How progressive principles became a crucial aspect in Science Education

Getting the students; full interest and attention is also a major obstacle. A study by Arrieta, Dancel, and Agbisit (2020) acknowledged this idea and stated that the nature of asynchronous online learning contains a limited number of strategies that can be suitable for this method. It was also implied that the teachers' prerogative made every learning session interesting and enjoyable for the students. Also, he mentioned that, keeping everyone involved in the discussion makes them more engaged and, therefore, can learn more during the session. Meanwhile, a study by Campbell, Melville, Verma, and Park (2021) stated an interesting notion that the moves a teacher can do during the synchronous sessions are very tight since the learning institution also issues guidelines that need to be followed. It can be argued that involving learners to participate during the learning procession is an effective way of progress in teaching combined science at form one levels.

For the students' part, Barrot, Llenares, and Del Rosario (2021) revealed that one of their main obstacles is the situations in their respective homes. In addition, the lack of socialization setup was also eyed as one of the factors of students' difficulties. Chaturvedi, Purohit, and Verna (2021) highlighted the importance of teachers adapting to the need to be technologically versed in these times. According to them, this equipment provides a direction the educators should follow to acclimate themselves to the developments in the education sector. As implied in the same study, these technological advancements dictate the pedagogical model implemented in online synchronous. Therefore the teacher has to identify the best interest of the learners and select the most appropriate progressive method that suit the situation in teaching combined science.

According to Locke (2008), he believed that adults take into consideration a child's temperament and individual differences. Locke believed that children were naturally curious and learned best through play and a variety of experiences. In the 1700s, Jean-Jacques Rousseau further promoted progressivist beliefs as a child-centered education. Rousseau's philosophy was that education should be based on the child's natural talents, their level of development and by the child's own discovery by learning through doing. Education was meant for the development of the whole child, not only intellectual growth but physical and emotional as well. This style of education was in opposition to the education being delivered in schools at the time. From these arguments, it is beyond reasonable doubt that Progressivism principles are important in teaching fraternity in preparing critical thinker.

2.2 Philosophy of progressivism in Science Education frame work

The education expansion drive, which gained momentum in earnest since the 1960s, did not produce the predicted societal benefits. For example, instead of eradicating unemployment, the specter of schooled unemployment raised its head, especially after the worldwide economic slowdown which set in after the first oil crisis in 1973. The 1970s was a decade of increasing pessimism amongst comparatives, as to the societal dividends of education. Rival paradigms to modernization and structural-functionalism developed, particularly theories of world-system analysis and reproduction theories. These theories saw education as a powerful tool in the hands of the powerful in society, to reinforce existing inequalities in society (cf. Wolhuter, 2007). The 1970s and 1980s were therefore decades of heterodoxy, as proponents of reproduction theory and world-systems analysis on the one hand, and advocates of modernization and structural-functionalism on the other, attacked each other. Thus how the concept on progressive principles came to be the heart of science education through hands on to produce functional school leavers and then argued that whenever the teacher is imparting scientific skills to learners, hand on can be regarded as the best method for learners to learn by doing.

The Philosophy of progressivism in teaching and learning was bought by John Dewey (1938) he believed that when societies calculate the price of education, they shouldn't' t only look at the cost of school buildings, teachers' salaries and other resources. They should also consider the costs of all the hours input by the children. Because the children are the future of our society and human progress, their time in class ought not to be wasted. It is thus the school' s responsibility to be a playground to practice a future we wish to see, so when the kids grow up, they can go and create.

In His first principle of learning by doing, Dewey championed learning by doing, also known as experiential learning. He observed that children learn better when they are actively engaged, because they are immersed in the present and not a distant future, such as final exams. In biology students don't read books, but instead grow plants, harvest fruits and then feed them to snails to see what happens. Sometimes things work out, sometimes accidents happen — whatever the outcome, the students take notes of their observations and form rich memorable experience secondly he advocate for discussions , which said they prepare the students for life in a democratic society where decisions ought to be based on reasonable arguments. Through the debates the children learn to formulate their own ideas, convince others, and learn to see the world from a different point of view.

In one discussion some started to argue that school uniforms limit self expression, and that they should be abolished. Also Hazratqulov & Talabasi, Ismatov. (2023) Supports Dewey's idea that, schools should prepare children for life itself and serve society as a force for innovation and reform encouraged those students to start a petition to find out for them if real social change is possible. On Interactive Classes principle, Dewey stressed that, interaction with the environment is essential for the learning process since education is an experience that is subject to constant change. Passive recipients of knowledge on the other hand, learn very little if anything at all. The group who started the petition presents their ideas to the teacher — and start a dialogue that expands their understanding and underlines their learning. Finally. Interdisciplinary Learning is of continuity is critical to comprehension and that an interdisciplinary education allows students to build on what they already know – which strengthens their understanding. What they observed in biology is being calculated in math, written about in English and put into images through the arts. These are fundamental aspects of learning and teaching of combined Science at form one level.

When implementing John Dewey's progressive principles in the teaching of combined science, educators can focus on promoting hands-on, experiential learning opportunities that engage students in real-world problem-solving (Dewey, 1916). By emphasizing the importance of student inquiry and collaboration, teachers can help students develop critical thinking skills and a deeper understanding of scientific concepts (Dewey, 1938). Additionally, incorporating interdisciplinary approaches into the science curriculum can help students see the connections between different scientific disciplines and foster a more holistic understanding of the natural world (Dewey, 1929). Overall, by following Dewey's progressive principles, educators can create a dynamic and engaging learning environment that promotes student curiosity, creativity, and collaboration in the study of combined science.

According to Smith (2019), progressive principles in the teaching of combined science emphasize a focus on inquiry-based learning, student-centered approaches, and the integration of real-world applications. Jones (2018) argues that incorporating interdisciplinary perspectives and promoting critical thinking skills are essential aspects of progressive teaching in combined science. Additionally, Brown (2020) highlights the importance of fostering collaboration and promoting inclusive practices in the teaching of combined science to enhance student engagement and understanding. Overall, scholars agree that adopting progressive principles in the teaching of combined science can lead to more meaningful and effective learning experiences for students and I can share the same view based on these objectives.

The knowledge economy asks for a new kind of education, a re-thinking of education, and all of this gives the field of Comparative and International Education ever more importance. In the second half of the twentieth century the philosophy of human rights gained ground. Education is generally regarded as one of these basic human rights. (United Nations, 1948) Clarified that, a central document in human rights is the United Nations Universal Declaration of Human Rights adopted in 1948, in which Section 26 declares education as a basic human right.

Progressive Curriculum and Zimbabwe's Curriculum Framework 2015-2022 .Believing that people learn best from what they consider most relevant to their lives, progressives centre their curricula on the needs, experiences, interests and abilities of students (Zahid et al., 2002)). This is reiterated by Samkange & Samkange (2013), who understand progressives as he stressed that, for children to benefit from education it should be related to their needs. Also the Zimbabwe's Curriculum Framework 2015-2022 (GoZ, 2015) adopts this progressivist ideal of relevance which it defines as the curriculum that addresses the developmental needs of the learner, the community and the nation .To Samkange & Samkange (2013), the main characteristics and principles of the progressive curriculum include the need to reflect the social life and social activities of learners. GoZ (2015) incorporates and manifests this principle of functionality where it says the curriculum addresses real needs and issues and is a tool for promoting competencies for life and work in a global context .The Curriculum Framework 2015-2022 is, therefore, progressive. The experience curriculum underlies progressive education, which is usually defined as one that follows a child-centered rather than a subject-centered curriculum (Chennault, 2013). Thus, the child-centered approach to instruction is at the epicenter of the progressive curriculum. Therefore, Zimbabwe's Curriculum Framework 2015-2022 vividly mirrors the progressivist experience curriculum which resonates with the child-centered approach. This observation is admissible because the said Curriculum Framework principally incorporates the learner-centered approach to teaching and learning which it calls the Inquiry-based learning an approach that aims at nurturing thinking, reflection and problem-solving among learners (GoZ, 2015)Like romantics, progressives believe that education should focus on the whole student, rather than on the content or the teacher .Zimbabwe's Curriculum Framework 2015-2022 manifests this ideal of holistic education in three ways including ,seeking to produce a well-rounded learner (GoZ, 2015, p. 68), through the principle of balance which refers to the comprehensive development of all aspects of a personality: intellectual; emotional; social; psychomotor and through decreeing Unhu/Ubuntu to be the underpinning philosophy – a point substantiated by Nziramasanga (1999) who explicitly and categorically defines Unhu/Ubuntu as “holistic education. In addition, Progressivism puts primacy on the integrated curriculum (Zahid et al., 2002). Zimbabwe's Curriculum Framework 2015-2022 manifests this principle of

integration which fosters meaningful linkages among learning areas and subjects that the curriculum offers (GoZ, p. 15). Furthermore, progressivism accentuates more curriculum diversity and seeks to interrelate the several subjects of the curriculum in such a way as to enhance their meaning for the child (Francis Parker, as cited in Siyakhwazi & Siyakhwazi, 2012, p. 35).

2.3 Schools role in promoting progressivism in teaching and learning of combined science

Schools are promoting progress principles in teaching combined science through the implementation of inquiry-based learning, hands-on experiments, and collaborative group work (Lane, 2017). Additionally, teachers are incorporating real-world applications of scientific concepts to engage students in the learning process (Smith & Johnson, 2018). Some schools are also integrating technology, such as virtual labs and simulations, to enhance students' understanding of scientific concepts (Brown, 2019). Furthermore, professional development opportunities for teachers are being provided to ensure effective implementation of progress principles in the teaching of combined science (Robinson & Williams, 2020). Overall, schools are taking a comprehensive approach to promoting progress principles in teaching combined science in order to enhance student learning outcomes (Johnson, 2021).

Zimbabwe's Curriculum Framework 2015-2022 showcases this progressivist curriculum diversity as it embodies a plethora of learning areas (and/or subjects) -which constitute the five pathways of STEM, Arts, Humanities and Languages, Design and Technology, and Commercials (GoZ, p. 38). The said curriculum document upholds the progressivist interrelation of subjects through its principle of integration and that of coherence which refers to the clustering of learning experiences to provide for holistic and comprehensive learning. For age-appropriateness, Rousseau the father of progressivism (as cited in Samkange & Samkange, 2013, p 133), argues that formal teaching has to be delayed until the child is ready. This is endorsed by Patsanza (1987) who quotes Rousseau stating that "it is useless to expect a child to indulge in abstract intellectual pursuits until he had reached the age of reason (12-16 years). This is, however, seen to be contradicted by Zimbabwe's Curriculum Framework 2015-2022 which provides for abstract intellectual pursuits (though in a diluted fashion) from approximately the age of 4 years, id est, from the early level. Therefore the researcher wants to find out that do all these principles adopted into Zimbabwean curriculum, are they practically implemented in teaching of combined science? If not what might be the cause and how can they be minimized for progress. There is also construction of labs and implementation of combined science as a compulsory subject this will promote scientific skills zealed with progressivism principles.

2.4 Challenges faced in the employment of Progressivism principles in science education

According to Smith and Johnson (2018), one common problem faced in the employment of Progressivism principles in the teaching of combined science is resistance from traditional educators who are reluctant to adopt new, student-centered teaching methods. This resistance can lead to difficulties in implementing progressive teaching approaches in the classroom. The researcher wants to dig out the root cause this resistance to change by the educators.

Furthermore, Lee and Brown (2017) argue that another challenge in applying Progressivism principles in the teaching of combined science is the lack of resources and support from educational institutions. Without adequate training, materials, and administrative support, educators may struggle to effectively incorporate progressive teaching strategies into their science lessons.

Additionally, Wang and Chen (2019) suggest that the complexity of combining various scientific disciplines in a single curriculum can pose a significant obstacle to the successful implementation of Progressivism principles in the teaching of combined science. Educators may find it challenging to design interdisciplinary lessons that effectively engage students and promote critical thinking across multiple scientific fields.

One problem faced in implementing progressive principles in teaching combined science is the challenge of integrating inquiry-based learning and hands-on experiences into a curriculum that is often heavily focused on content coverage. Progressive teaching approaches emphasize student-centered learning and active engagement with material, which can be difficult to achieve when there is pressure to cover a large amount of content within a limited time frame.

Another challenge is the need to assess student learning and understanding in a way that aligns with progressive principles. Traditional assessments such as standardized tests may not effectively measure the skills and competencies that are emphasized in a progressive teaching approach. (Johnson, R.A. 2021) This can make it difficult to demonstrate the effectiveness of progressive teaching methods to administrators, parents, and other stakeholders.

According to Robinson, S.M. & Williams, D.P. (2020), the implementation of progressive principles in teaching combined science may be met with resistance from educators who are more comfortable with traditional teaching methods. There may be a lack of support or professional development opportunities for teachers who are interested in adopting a more progressive approach to teaching.

To address these challenges, National Research Council. (2012) Objectified that, educators can seek out professional development opportunities that focus on progressive teaching methods, collaborate with colleagues to share resources and best practices, and advocate for changes in curriculum and assessment practices that align with progressive principles. By working together and advocating for change, educators can create a more student-centered and engaging learning environment in combined science. There is the need for the researcher to identify what is taking place in classrooms and find out relevant solutions.

2.5 PROGRESSIVE METHODOLOGY AND PEDAGOGICS IN ZIMBABWE

The use of group work is a progressive teaching approach based on the interests and needs of the child as stressed by Siyakwazi & Siyakwazi,(2012, p. 40). This is endorsed in Teaching Academy undated where it is argued that progressives emphasis on group activity and group problem-solving so that the students learn through cooperative learning strategies. Thus, group work is instrumental in the development of social skills. Zimbabwe's Curriculum Framework 2015-2022 affirms this progressivist notion of group work where it provides for learners to work collaboratively with classmates and others beyond the school.

Curriculum Framework 2015-2022 sets a premium, manifests this Deweyan progressive project method. As the curriculum document in question says "teacher is facilitator and coach (GoZ, 2015), it correspondingly views the teacher as a resource facilitator. Progressives stress learner-centred instruction id est "to move the child to the centre of the educative process (Francis Parker, as cited in Siyakwazi & Siyakwazi, 2012, p. 35). This is endorsed by Samkange & Samkange (2013), who hold that "the child should be the centre of educational planning . In line with the foregoing, Zimbabwe's Curriculum Framework 2015-2022 (GoZ, 2015) argues that the focus of learning revolves around learners as they engage in the search and discovery of new knowledge .

Thus, the said curriculum document, which commits to placing the learner at the centre of learning and teaching, manifests strong progressivism tendencies. Progressives place emphasis on learning by doing, hands-on projects, experiential teaching (Zahid et al., 2002), and field trips (Akinpelu, 1981). Experience represents the core concept of Dewey's theory of progressivism (Teaching Academy, undated). Correspondingly, Zimbabwe's Curriculum Framework 2015-2022 accentuates discovery learning which involves problem-solving situations where learners tap from their past experiences or existing knowledge to discover facts and new knowledge. This includes active hands-on learning opportunities for learners (Castronova, as cited in GoZ, 2015, p. 42). Thus, the said curriculum's inclination towards heuristic learning is of a Deweyan progressivism making. Progressivism recognizes favorably the experimentalist approach to education – placing more explicit emphasis on learning through solving real-life problems central to the Tuskegee curriculum – what could be called a project approach (Chennault, 2013.) Hence, progressivism identifies strongly with the four stages of experimentalism that include identification of a problem, coming up with a hypothesis, experimental testing and inductive argumentation (Samkange & Samkange, 2013). Progressivism, thus, “stresses that students should test ideas by active experimentation. Learning is rooted in the questions of learners that arise through experiencing the world” (Teaching Academy, undated).

This experimentalist outlook is reiterated by Samkange & Samkange (2013, p. 454), who say according to the philosophy of John Dewey, experimentation by children as they learn allows them to try new ideas. This connotes that the Deweyan experimentalist approach to instruction is abundantly positioned to harness the learners' inherently inquisitive minds. Samkange & Samkange (2013) also submit: Children should be allowed to discover answers to problems through their interaction with the physical and social environment. Such an approach is seen as developing thinking and problem-solving skills in children. Progressivism in education is seen as promoting creativity and freedom among children. Children should be able to use different tools that support their education. It is not the books that determine what children learn, but rather children have the power to decide (p. 454).

Zimbabwe's Curriculum Framework 2015-2022 manifests the above-stated progressive experimentalist outlook of education as it places emphasis on discovery, problem-solving, reflective thought (critical thinking) and creativity. However, the said Framework deviates from progressivism as it seems to constrict the learner autonomy implicated in the above quote. Progressivism recognizes understanding and action as the goals of learning as opposed to rote learning, this theory also condemns exclusive reliance on bookish methods of teaching and passive memorization of factual data (Zahid et al., 2002). Zimbabwe's Curriculum Framework 2015-2022, therefore, harmonizes with this progressivism exaltation of education with praxis, which concurs with Lipmann reflective paradigm of education. Hence, the said Framework (GoZ, 2015) says the focus will thus be on knowledge generation not just information delivery and treating learners as empty vessels ready to be filled with information. In other words, both progressivism and Zimbabwe's Curriculum Framework are wary of the lecture method and indoctrination tendencies. Use of realia is central in the progressivist class (Samkange & Samkange, 2013). This finds testimony in Montessori [1870-1952 A.D.] (As cited in Patsanza, 1987, p. 52) who used sensor-motor materials and reality-oriented experiences to accelerate early cognitive development

Moreover, the play way methods were advocated by Montessori and popularized significantly by Friedrich Froebel [1782-1852 A.D.] (as cited in Patsanza, 1987, p. 53) whose major aim of education was the social and individual development of the youngster through directed self-activity that emphasized cooperation, spontaneity, creativity, and joy – the free unfolding of the child's nature? Correspondingly, Zimbabwe's Curriculum Framework 2015-2022 (GoZ, 2015) incorporates the progressivist use of realia as it urges the use of multiple forms of media and manifests progressivist play way methods in the infant education cycle where the Curriculum Framework in question says learners achieve outcomes through play and exploration.

Progressives (most prominently Dewey) strongly emphasize the project approach to instruction (Chennault, 2013), wherein learners are allocated into groups each with a task and the teacher serves as a resource facilitator. Working with each group individually, the teacher would suggest sources and help students discover ways of pursuing the project and such tasks impart any life skill to the learners. It is clear that this is a pointless concept and must be dumped quickly before it causes permanent damage to our children. Some teachers and parents have argued that if a university student can only concentrate on one research project at the end of their programme, why learners from primary to secondary school should be made to research on several projects.

There is palpable public anger and discontent over the Continuous Assessment Learning Activity (CALA) program which was introduced in schools in 2016. The program has come under attack from parents and teachers alike for wasting time and resources without adding value. The uproar came out as parents and stakeholders debated with government officials during a curriculum review that started this week on Monday. The Primary and Secondary Education ministry recently started engagements with stakeholders to review the CALA curriculum, which entailed learners undertaking projects as part of the coursework requirement for the final examinations.

The CALA curriculum, since its inception, has been heavily criticized by students, parents and teachers for being a challenge since no training was done prior to its introduction, while it is also financially demanding. As the curriculum review is currently underway, stakeholders have proposed the removal of the concept, describing it as useless in terms of adding value to children's education. If the second republic of President Emerson Mnangagwa is a listening government it must heed people's calls and dump this program. Because of the complications around it, most of the research work is done by parents and guardians. Teachers have been cashing in on the desperation of the students, charging hefty fees to do the work themselves. They suggested that learners, especially those in examination classes, should have such projects in their practical subjects of choice such as agriculture, carpentry, science, dressmaking, cookery, among others.

Many teachers have urged the government to rethink CALA and come up with a budget to support it. Amalgamated Rural Teachers Union of Zimbabwe president Obert Masaraure said monitoring and evaluation of CALA should take place at every stage. Currently, the CALA monitoring and evaluation structure could be rigged to make it appear as if it is working. Assessments were not continuous as expected. It was simply a process of assigning marks to raw learners. The grades that were awarded do not reflect the true profile of the learner.

According to Masaraure (2020) , the implementation of CALA demanded massive investments in capacity building of teachers, investment in raw materials for implementation and competitive remuneration of teachers to enhance morale and curb corruption. He further stressed that, currently the teachers don't have the capacity to competitively evaluate and supervise CALA projects. Learners are struggling to secure learning materials required for implementation of CALA. There is the need to access the importance of CALAs as hands on philosophy and close the gap for progress in learning of science.

2.6 Education system planning and reform

In reforming or improving the education system, or in grappling with an educational issue, challenge or problem, one country could benefit from the experiences of other systems. When a country faces a particular educational issue or problem, a study of the experience of other countries that once faced the same problems could reveal the full extent and implications of the problem. Possible contributory causes and also possible solutions could be suggested to these problems. An example is Wolhuter's (2003) publication of the illuminative value to South Africa of the experiences of Germany and other countries while attempting a dual vocational education and training system.

Education research can assess the track record of particular teaching methods in particular contexts. Not the least significance is the value of assisting to improve teaching practice in multicultural classrooms, as Planel (2008) convincingly shows in her comparative study of pedagogy in Science classrooms. Interestingly, research on students' expectations and experiences of Comparative Education courses have revealed that students also looked onto Comparative Education courses to assist them with the improvement of their teaching practice (will be elaborated upon in the next section).

2.7 Comparative and International Education for Progress

It has been described as having an unusually wide terrain (Colclough, 2010:821) and an eclectic/diverse field with adjustable borders and contours which are difficult to demarcate (Epstein & Carroll, 2005:62). The best way to derive at an image of its identity and features is through a study of the historical evolution of the field, as it is through such a study that the main lines and development.

Comparative Education transcended from borrowing to improve the education system of one country, to a more altruistic, universal ameliorative motive: Comparative Education to serve the interest of humanity, to improve the fate of humanity and to better the quality of life of all humans. In contents, methods and structure of education. It builds networks to share expertise on curriculum development in all regions of the world and aims to introduce modern approaches in curriculum design and implementation, improve practical skills and promote informed policy dialogue at national, regional and international levels.

UNESCO was founded in 1945, and has its headquarters in Paris. At that time, immediately following the devastation of the Second World War, it was a widely held belief that education could pave the way for enduring peace — a concept expressed by Archibald MacLeish in words which open the UNESCO charter: Since wars begin in the minds of men, it is in the minds of men that the defenses of peace must be constructed (Fernig, 1993). UNESCO has a massive library on education in Paris, is an important collector and documenter of educational statistics, and publishes educational statistics. It also maintains a website containing educational statistics on the countries of the world. Other such organizations are the International Institute for Educational Planning (IIEP), located in Paris, and the UNESCO Institute for Pedagogies (UIP) in Hamburg. By the 1980s the World Bank came to the fore as the biggest producer of Comparative Education literature in the world (Altbach, 1991: 502-503). The World Bank publishes the research it produces on educational aid program and on educational development in the developing world. With all these ideas of educational principles, the government of Zimbabwe found it necessary to review its curriculum to suit with tentative world.

The most extensive project of international studies is the International Association for the Evaluation of Educational Achievement (IEA), founded in 1959 in Stockholm. Since its inception, the IEA has embarked upon a series of extensive studies in learner achievement in the areas of science, mathematics the standing TIMMS - Trends in International Mathematics and Science Studies, and reading literacy, (the standing PIRLS studies - Progress in Reading Literacy Studies). In recent years, the international PISA (Program of International Student Assessment) tests have become very prominent.

Furthermore change can be planned in one system to bring about a desired change in another system. Therefore, education can be used to effect change in other systems, for example, education can be used to effect economic growth economic system. When looking at the emerging nations of the Third World, the paradigm of modernization contended that education is the main instrument to bring about development and modernization in these nations. During this phase, which reached its zenith in the 1960s, Comparative Education took over theoretical frameworks from other social sciences such as economics and sociology, and this is why it is called the social phase of Comparative Education. A second feature of the era is the beginning of a worldwide education expansion drive.

2.8 CHAPTER SUMMARY

In summation, the above scholars had different visions on the use of Progressivism principles in school systems. Some were even against especially those who advocate for abolishment of CALAs and some were proposing for constructive way of implementation of hands on in science though they vary in their expressions. However, the majority were of the opinion that corrective measures must be varied and determined by nature of resources available .From the above scholarly arguments, the researcher has to carry out his findings in finding solutions to all these debatable research problems . He is going to use research tool and sampling techniques which are going to be explained in the next chapter.

3.0 INTRODUCTION

This chapter is about the methods and techniques that the researcher will use to gather data during his study. MacMillan (1993) defines research methodology as to how evidence is gathered and meaning derived from it. Research methodology is systematic and purposeful. This chapter will explain on the paradigm, design or nature of the research sampling techniques, methods and the instrument which are were used. Raw data was collected, analyzed and interpreted before valid conclusions were made.

3.1.1 RESEARCH PARADIGM

In this study the researcher used post-positivism as it is the philosophy that mentioned regarding the concept that truth can't be justified with the assumption of its verification through a theory but its falsification as well as opposed to the approach of positivism (Fox, 2008). This paradigm is characterized by the belief in the existence of multiple realities than the single reality, it involves a focus on nature of reality (otology) and epistemology since it allows flexibility in selecting methods that align with the progressive principles in teaching science.

3.1.2 RESEARCH APPROACH

Based on the above paradigm, this research used qualitative research approach since the aim of the study was to gain knowledge and to describe how people behave and think in certain circumstances. Marshall and Rossman (1999) commented on the benefits of qualitative research saying that it draws mostly on multiple sources, on people's views and opinions of specific experiences. Walliman, (2011) objectified that , qualitative approach in teaching science humanize the sense of developing interventions based on progressive principles ,such as positive psychology, to influence various aspects of students academic success in schools. .

3.1.3 RESEACH DESIGN

The research was a case study which follows qualitative approach. This approach shall be considered appropriate since it provides in-depth information about gathering information. According to Creswell (2009), a case study is concerned with describing recording analysis and reporting conditions that existed. Also Kerlinger (2000) argues that case study method is widely used to obtain data useful in evaluating present practices and provides basis or decisions. Personal observations were done; this method implies the collection of information by the way of investigators' observation. The information obtained relates to what is currently happening and it is not in any form related either to the past or future behaviour of respondents. Robinson (2001) defines research design as a scheme of action or framework for answering the research questions. He further went on to define it as a way in which researcher plans and structures the research process qualitative approach is the best for investigating human behaviour and learning.

The latter concurs strongly with Mertens' s (2015) perception that a qualitative methodology is based on a naturalistic phenomenological philosophy that perceives reality as a multi-layered, interactive, and shared experience. As such, a qualitative approach to a study will, by implication, focus on the study of cases or instances in their natural settings. Chisaka, Mamvuto, Matiure, Mukabeta, Shumba & Zireva (2013) argue that qualitative research uses a natural setting as the direct source of data. In a natural setting, there is no room for the creation of an artificial setting; rather participants' views, beliefs, values, and meaning are obtained from their everyday situations. Couched in a natural setting, qualitative research leads to the acquisition of in depth description of a specific phenomenon (Creswell 2014; Cohen, Manion & Morrison 2011, and Mertens 2015).The research design provides the guide post and keeps the study in the right direction. The research project used a case study which Borg and Gall (1989) refer to as a systematic method of data collection as It adds validity to the research since it enables the researcher to analyse research findings. In this research, the researcher used observations, questionnaires and interviews to gather information.

3.2 .1TARGETED POPULATION

Population is the group of interest to the researcher which one would like the results to be generalized. Chikutsa and Chingozha (2011) assert that population is an entire count of people or objects with characteristics under study. The population of this study is all schools in Karoi cluster which sums up to six (6) schools. However the researcher was not able to carry out his finding in all these schools, he selected only two schools which represented the whole population group.

3.2.2 SAMPLING

The researcher on his study focuses on two schools in Karoi cluster of Hurungwe District. In these schools he was specifically targeting form one learners and few teachers per school. The sample was a total of eighty (80) people, twenty (10) pupils from each of two schools in Hurungwe District and ten (10) teachers from both schools. Borg and Gall (1989) defines targeted population as well numbers of a real hypothetical set of people, events or objects to which we wish to generalize the results of these research. The pupils were drawn from each form one level class per school after thorough consideration. Teachers were selected at random at each school. According to Leed (1993), population or subjects studies are concerned with the way in which people are distributed through time and space. It also looks at factors which generate changes in sources of data and it also takes into cognizance the infinite and finite population. The use of a finite population removes uncertainty in terms of representation which is often associated with a sample.

3.2.3 SAMPLING TECHNIQUES

A sample is defined by Leed (1993) as a portion of elements in a population chosen for direct examination or measurement. Sampling thus becomes the process of selecting a segment from the whole population. The sampling procedure that the researcher used is random sampling of which the election of one pupil did not influence selection of the other. To determine sample size the researcher numbered thirty cards A, B, C and ask form one pupils to pick one card each. Then five boys and five girls who picked card A were taken. The researcher also used the same technique with teachers and had a group of ten pupils per school to make a total of twenty pupils and a total of ten teachers was obtained.

3.3.1 CASE STUDY

In this study, a case study was used since multiple methods of data collection are used, as it involves an in-depth study of a phenomenon. Yin (2009, p. 18) defines case study as an empirical inquiry which investigates a phenomenon in its real-life context. In a case study research, multiple methods of data collection are used, as it involves an in-depth study of a phenomenon. Bryman (2008) says that case study research generally involves a longitudinal element. A longitudinal study entails studying the same phenomenon on two or more occasions in order to discern any perceptible change which has occurred in the phenomenon under investigation over the period of time. Case Studies are a qualitative design in which the researcher explores in depth a program, event, activity, process, or one or more individuals. The case(s) are bound by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time.

3.3.2 BENEFITS OF A CASE STUDY

The researcher opts to use a case study due to the following benefits. A case study can most aptly be used for testing hypotheses, and not the entire theory. Attempting to test the whole theory is like spreading oneself too thin in a case study research, and ultimately losing one's way. Generally, we tend to cull out a few hypotheses or propositions from the existing theory, and then attempt to test the former in the case under investigation. Hypothesis testing is best achieved through the process of 'falsification' as propounded by Popper (1959). Also Yin (2009) was of the argument that, in a case study research, the issue is not to generalize over some broader population, as the case study is not based on a sample. Rather, as in experimental study, we need to examine the external validity through replication.

3.3.3 Disadvantages of a Case study

During the conducting his study, the researcher was aware of some of the limitations in order to minimize faults outcomes. Case studies are primarily ideographic and nomothetic8 study from them is difficult. Mitchell (1983) says that case studies are unique and atypical, and attempts at finding a 'typical' case whose findings can be generalized are not only tricky but also arduous. However, Punch (2005) believes that many of these criticisms are being overblown. Yin (2014, pp. 44–45) says that since a case is not representative of a sample of cases, it cannot form the basis for statistical generalizations. However, case studies allow for analytic generalizations in which a previously developed theory is used as a template to compare the empirical results of the case under study. Such generalizations strengthen the explanatory power of a case study. Therefore the researcher decided to use a case study in his project because of its limited weakness than advantages.

3.4 RESEARCH INSTRUMENTS

The researcher used observations, questionnaires and interviews to obtain data.

3.4.1 OBSERVATIONS

Francis (1993) says that, direct observation is normally considered as the most accurate method of collecting data. This method involves a lot of watching of the subject matter under study. There were not much of verbal interaction, most of the information being obtained from the observers` judgement; the researcher also used participants` observations. The teacher used his designed observation table tick and recommend on areas of observations. He was guided by his major research questions based on progressive methods used, challenges and primitive measures for progressive principles in teaching and learning of combined science at form one learners .However all these observations that made by the researcher were recorded.

3.4.2 VALIDITY AND RELIABILITY OF OBSERVATIONS

The method is considered reliable since pupils being observed will be not aware that they were being observed for a purpose . Very genuine reactions can fairly displayed by both pupils and teachers. The researcher was able to get valid information since he is able to observe three situations at different schools. Creswell (2009) argued that the researcher will be able to measure the content intended to weigh up the use of Progressivism in teaching of combined science.

3.4.3 LIMITATIONS OF OBSERVATIONS

However the method was problematic since some false information can be recorded by the observer and some pupils will just react for the case crowd' s emotions. Therefore the researcher observed more than two situations to minimize this biasness as what the researcher done when observed two schools to have fair results. In this study, the researcher adopted the participant-as-observer role to be close to the teachers and students while classes will be going on in order to observe other shortcomings . The method also will enabled the researcher to observe the pupils' learning process, and how the learners responded to the lessons and class exercises.

3.5 QUESTIONNAIRES

The researcher is going to use structured open ended and closed ended questionnaires to gather data from students. The nature of these Questionnaire will encourage probing of facts such that the respondents will not be confined. They are designed in such a way that the respondents will able to air out their views freely without boundaries. A variety of questionnaires are to be used to broaden ideas from respondents on progressive principles. Francis (2000) defines questionnaires as a data collection instrument which is used to structure the data collection process. According to Hannagan (2001:40) a questionnaire is a study or list of questions designed for the discovery of particular information.

3.5.1 VALIDITY AND RELIABILITY OF QUESTIONNAIRES

The researcher will bring the questionnaires to the supervisor for clarification and corrections before gathering data such that valid information can be obtained. The advantage of using questionnaires is that the responses that will be given are first-hand information and the researcher will be able to compare the response of one person to another. Data can also be easier to analyze and the response is free to give more details to the question asked.

Emotions towards the questionnaire should be considered or taken note of by the researcher since questionnaires are completed different distant away. This will be done to minimize biasness and for both teacher and pupils the researcher shall use questions.

3.5.2 LIMITATIONS OF QUESTIONNAIRE

Many a times, the size and diversity of sample will be limited by people' s ability to read. Thus, questionnaires may only be administered to literate individual(s) since they require respondent to read, understand and fill in. The absence of the researcher may probe the respondents to consult each other and, in a way, their course of action may affect the validity and reliability of the researcher's findings. This implies that given lack of contact with respondent as in some cases, one would never know who really completed the survey. Makare Rukuni (2002) objectified that survey respondents may not complete the survey resulting in low response rates and items contained therein, may not have the same meaning to all respondents. Many a times, the size and diversity of sample will be limited by people' s ability to read. Thus, questionnaires may only be administered to literate individual(s) since they require respondent to read, understand and fill in.

However, good survey questions are difficult to design and they take considerable time to develop and hone and there are limited chances for one to probe for additional details.

3.6 INTERVIEWS

According to Robson (1990) an interview is a personal interaction between the interviewer and interviewee with a purpose. The interview is more flexible and adaptable way of data collection than the questionnaire hence it will complement the other. The researcher will use open ended questions to obtain a variety of views and express their views. He is going to interview some teachers, thus they will give their opinions as to how often and effective in offering different teaching methods to different types of mischievous, sharing more information about their experience of staying with some learners for the past five years. Also teachers shall air their sentiments from their professional experience.

3.6.1 VALIDITY AND RELIABILITY OF INTERVIEWS.

To determine the reliability of one-on-one interviews, it will be tested for teachers and pupils. Also the reliability of the interviews as stressed by Spiers (2002) responses found to be consistent and similar in different schools. Valid questions shall be used since researcher came with his to the supervisor for assessment before collecting data. Also the shall be transparent since he will explain clearly to the respondents the purpose of the interviews before and they will give their views freely without fearing of the unknown. Another advantage of interviews is that the interviewer will observe facial expressions and verbal clues which may be either be supporting or belying the spoken words hence having more validity.

3.6.2 LIMITATIONS OF INTERVIEWS

However pupils might have just to get over with the interview or as a way of justify themselves and exploring progressive principles by the teacher.

3.7 ETHICAL CONSIDERATIONS

In phase 3 of the study, to gain access to the schools permission will be obtained from the school heads. The researcher is going to explain to the participants that the information supplied by them and their identities would be treated confidentially and will not be disclosed to the public since their names and addresses will not be revealed in the study.

3.8 DATA PRESENTATION AND ANALYSIS PROCEDURE

Data presentation gives detailed findings and it provides a summary explanation of the research study. These are put in a visual manner to communicate the maximum information in the most efficient manner. Qualitative data generated from through the use of interviews was analyzed according emerging themes. While on quantitative data questionnaires was analyzed statistically (percentages and frequencies). Descriptive statistics was used for interpreting numerical data. This method will enable the researcher to summarize data which are numerical measures characterizing the distribution of the data. The use of the frequency tables will prove to be the most appropriate in this.

3.9 CHAPTER SUMMARY

The chapter has described the progress and procedures which the researcher shall use to collect data in this research work. The method laid down will be used to obtain data will be analyzed and presented in the next chapter.

CHAPTER FOUR DATA PRESENTATION, INTERPRETATION and ANALYSIS

4.1 INTRODUCTION

This chapter focus on interpreting, analysing and discussing data collected by the researcher. The data collected sot to answer the topic exploring progressive principles teachers are using in teaching form one combined science. Data was collected using interviews, questionnaire and observations and it shall be presented in form of tables. Section A will present biographical data for teachers and learners. Finally section B will present data answering questions for the major topics. The researcher opts to present data in form of tables.

4.2 SECTION A BIOGRAPHICAL DATA

Table 1 Showing Biographical data for Teachers

Teacher number	Sex	Age	Experience (Years)	Qualifications
1	30--40	M	Above 5	Degree with Education
2	Below 30	F	Less 5	Degree with Education
3	Below 30	M	Less 5	Degree with Education
4	40--50	F	Less 5	Dip in Education
5	30--40	M	Less 5	Degree with Education
6	30--40	M	Above 5	Degree with

				Education
7	40--50	F	Less 5	Dip in Education
8	30--40	F	Above 5	Dip in Education
9	40--50	M	Above 5	Dip in Education
10	40--50	M	Above 5	Dip in Education

From table one, it shows that the researcher interviewed ten teachers, six males and four females. Three males were aged between thirty to forty years, one male was above forty and two males were between thirty and forty years. One female was below thirty years, one female teacher was aged between thirty and forty and two of them were aged between forty and fifty years. Five of the teachers were above five years experience, four teachers were less than five years experience and two of them were below five years experience. Five of these interviewed teachers were graduates with Education and five were diploma holders.

The implications of age, sex experience and qualifications on exploring progressive principles in teaching combined science is that highly qualified science teachers carefully sequence the best knowledge from their subject area and deliver it directly to the whole class. John Dewey (1938) stressed that progressive teachers should instead facilitate pupils exploration of their individual interests, there by naturing curiosity and thinking skills. He furthers that, problem solving depends on existing knowledge related to the specific problem, rendering domain general and views curricula should be rich in knowledge from specific academic disciplines. From the above biographical data of science teachers, half of them are graduates and another half are diploma holders. This sample is capable enough to explore progressive principles in teaching combined science hence data gathered is correct.

Table Two showing biographical data for learners

Student number	Sex	Age
1	F	14--16
2	F	10-- 13
3	M	10--13
4	M	10--13
5	F	14--16
6	F	14--16
7	M	14--16
8	F	14--16
9	F	10--13
10	M	10--13
11	M	14--16
12	M	14--16
13	F	10--13
14	F	10--13
15	M	10--13
16	F	14--16
17	F	14--16
18	M	Above 16
19	F	10--13
20	F	14--16

Table Two shows that questionnaires were given to twenty learners' eleven girls and nine boys. Six girls were aged between fourteen and sixteen years and five girls were ranging from ten to thirteen years. One boy was above sixteen years, four of them were aged between ten and thirteen years and four were aged between fourteen and sixteen years.

Implications of this biographical data of learners are that the age range is ready enough to learn progressive principles. Samkange (2013) argued that, the beginning of instruction shall be made with the experience learners already have, these experiences and capacities that have been developed provide starting point of all further learning. He adds that occupations which extract responsibilities in child relate to physical realities of life. John Dewey (1938) stressed that, it is useless to expect a child to indulge in abstract intellectual pursuits until he reached the age of reasoning, formal training has to be delayed until the child is ready.

In the next section, the researcher will present data for teachers and students respondents on problems faced in employment of Progressivism principles in teaching of combined science form one.

4.3 SECTION B : Response to problems faced in employment of Progressivism principles in teaching of combined science

Table 3 showing teachers and students respondents on problems faced in employment of Progressivism principles in the teaching of combined science form one

Respondents	Agree	Disagree	Neutral	Nature
Learners	15	2	3	Lack of resources
Teachers	10	0	0	Lack of resources

All teachers agreed that there are challenges in applying Progressivism principles in teaching of combined science due to lack of resources like apparatus, labs and infrastructure. Fifteen learners agreed that there are no labs and other resources which the researcher also observed that all schools do not have a lab, they both use closet rooms as labs. Also infrastructure and apparatus were very far below expected standards. Only two learners disagree and three were neutral on challenges being faced. They were based on the fact that teachers are improvising but however the nature of practical were said to be substandard.

From the responses indicated by the participants, schools are facing challenges in terms of resources to promote progressive learning. This goes hand in hand with Brown (2017) observed, he argued that most schools have limited resources such as labs, infrastructure and support from Educational institutions. Also Marsh C.J (2003) who mentioned that generally South African in rural and semi rural setting appear to have more challenges which relate to resources. These arguments shared the same vain with what has been observed by the researcher, were by both schools did not have a lab and apparatus. However, regardless of the availability of resources, all schools including those in rural areas that have limited resources are expected to employ progressive principles in specific skills.

4.4 SECTION C: Response on Progressivism principles employed by science teachers

Table 4 showing teachers and students respondents on progressive methods used in teaching of combined science form one

Respondents	Discussions	Experiments	Models	Nature
Learners	5	14	1	Experiments are said to be done as a class group
Teachers	10	10	2	Graduates above 40 years are employing model

The table shows that fourteen learners agreed that experiments are done at their schools .Both boys and girls shared the same sentiments and 5 of them stressed that discussions are done and only one boy said models are employed though not compulsory. All teachers agreed that they are doing experiments and discussions as well. Only two graduates who were above forty years are using models. This was also observed by the researcher since models are employed at learners will and experiments are done as a class group.

Implications of these response shows that teachers and students are aware that science subject need to be done practically. Dewey (1938) stressed that educators should focus on promoting hands on, experimental learning opportunities that engage students in real- world problem solving. Locke (2008) also believed that adults take into consideration a child temperament and individual difference. However the researcher observed that teachers are dancing according to availability resources only to cover the syllabus. Babacakova and Bernard (2020) mentioned in their research that teachers are still using videos and hence these supplement lecture methods

4.5 SECTION D: Response on school facilitation in application of Progressivism principles in teaching of combined science form one

Respondents	Cluster teaching	Work shops	Lab construction	Apparatus and furniture purchasing	Science fund raising
Teachers	0	3	9	5	2
Learners	0	0	19	2	3
Nature	Learners and teachers said nothing like that in schools	Those who agreed said are done once per year and attended by the heads	Learners just agree with out reasons and teachers said construction	Those who agreed said it is only done towards exams and purchased by	Most teachers disagree as well as learners

		and learners do not know	is poor and sub standard.	Heads. learners do not know	
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The table shows that both learners and teachers disagreed that there is no cluster teaching in schools as a staff developed exercise. Only three teachers said workshops are done once per year and attended by school Heads. Seven teachers and learners said that there are no workshops done .The researcher also observed that works shops are only done to formalize. Nine teachers and nineteen learners agreed that lab construction started at schools though sub standard. Also the researcher spot observed that though only one teacher and one learner disagreed. Five teachers agreed that science apparatus and furniture are purchased only towards exams, two learners just agree with out reasons and eighteen learners and five teachers disagree. Seven teachers and eighteen learners said there no science fund raising. Only two teachers and three learners agreed without stating reasons.

From the above responses and observations made by the researcher, schools are starting construction of labs to promote experiments carryout. Brown (2011), from his research stated that schools are integrating technology like virtual labs and stimulation, to enhance student understanding of scientific concept. Professional developments opportunities for teachers are being provided to ensure effective implementation of Progressivism principles in the teaching of combined science Johnson (2021). He furthers that overall schools are taking a comprehensive approach to promote progressive principles in teaching combined science in order to enhance student learning outcome. However from the finding schools are not engaged into in service trainings and fund raising programs to promote progressive principles .The researcher observed that both schools were engaged into science labs construction hence they are considering experiments as science learning tool.

In addition, from the observation made by the researcher, the questionnaire responses contributions, one thing that is outstandingly common is that the teacher-pupil ratio is solely inappropriate. All Science subjects including Biology and Combined Science to mention a few,

are all activity or pragmatic based hence a lot of learners of late have been pulled towards such subjects for the practical exposure. Needless to mention that this was further exacerbated by the government introduction of the STEAM or STEM bursaries which put Science related subjects on the vanguard of all other preferences for funding.

However, despite all the positives, there seems to be a challenge when it comes to teacher pupil ratios especially in public or government schools. Esiob (2005) observed that the number of learners enrolled in most public schools exerts a lot of pressure on the little resources available within a given school and this in turn jeopardizes how the teachers and learners interact. In essence, the proportion of teacher-learners in a given class is bizarre.

CHAPTER SUMMARY

Schools are struggling due to shortage of resources, labs and funds. This will hinder employment of progressivism principles in teaching combined science form one. Learners have to scavenge for the available scientific apparatus in order to get a fill of what Combined Science is all about. Adding on, the teachers themselves also highlighted that they are demotivated due to shortage of apparatus, hence they put little effort in the supervision of the entire class during a lesson. This goes without making mention of poor lab facilities and too much workload.

CHAPTER 5 SUMMARY, CONCLUSION and RECOMMENDATIONS

5.0 INTRODUCTION

This chapter gives a summary, conclusion, and recommendations with respect to the study findings. The study sought to find out that what progressive principles combined science teachers are using in teaching form ones and it was answering the following questions: A) what challenges combined science teachers are facing in employing progressive principles ? B) Which Progressivism principles teachers are using in teaching combined science form one? C) Do schools facilitate Progressivism principles in the teaching of combined science form one? The findings we as follows, schools are lacking resources like apparatus, labs and furniture to promote progressive principles, teachers are giving sub standardised experiments based on available apparatus and schools are trying to bridge the gap to promoting progress principles by starting to construct labs and engaged into in-service training though the pace is slow Data was presented, interpreted, and analysed in line with the research objectives.

5.1 SUMMARY

The first Question sought to find out that, is there any challenges in schools to employ progressive principles in the teaching of combined science form one? This is what happening in schools, there is no science apparatus to do experiments in schools. Both schools under study indicated that most decorated chemicals are expired and are very few. Experiments are just done to formalise combined science learning procession. The teacher however will dance according to limited resources present. Both learners and teachers under study and observations made by the researcher indicated that there is no way Progressivism principles can be employed effectively due to lack of resources. Also in both schools labs were on foundation level of construction, this shows that they are struggling to construct a lab due to lack of funds and poor payment of schools by most learners. It shows that they can run up to many years without fully constructed labs. Teachers number three of school A during face to face interviews aired that the slab foundation of this so called science lab is the fashion of the school for the past five years. As Zireva, D.etal (2013) objectified that, teachers in Zimbabwe showed concern about inadequate Science laboratory equipment and lack of assistant teachers responsible with laboratory resource

inventory. Furniture is another challenge in schools for effective learning of combined science, however most teachers are science qualified now and are trying by all means to improvise.

The second question sought to find out that what progressive principles combined science teachers are using in schools when teaching form ones. The following were the findings teachers are using discussions and limited experiments in the teaching of combined science form one. Only highly qualified graduates teachers are employing making of models in the teaching of combined science. Most diploma holders did not value models in their teaching procession. However experiments are done as a group not individually to promote hands on. This is so because there is no enough apparatus for individual experimentation. Thus, information used in this research was obtained from teachers and learner participants who were sampled to participate in this study. This goes without mentioning that it sought to establish the strategies that can be adopted to improve the teaching and learning of combined science.

The third question sought to find out that, do schools facilitate Progressivism principles in the teaching and learning of combined science? The following were the findings of the study , schools only engaged into in-service training like workshops just to formalise as a requirement of educational tool . Only school Heads are attending science workshops to benefit the heads instead of classroom practitioners and this serves no purpose to promote progressive principles in schools. Moreover lab construction is done such that the District schools Inspectors will only see that something on science department is done. No purchasing and funding of science apparatus in schools. Only expired sciences chemical were decorated. School fees payment is very poor in most rural schools and there is lack of fund raising programs to sustain science department for progressive learning. The study established a number of teacher perceptions with regards to what progressive principles teachers are using in teaching of combined science form one. Teachers were very concerned with the non-availability of resources at their school. To be specific, educators indicated that there was a lack of appropriate instructional materials, high teacher-pupil ratio, congested timetable, lack of support from administration. Chivore, B .N.S (2006) ascertains that, teachers in Zimbabwe showed concern about inadequate Science laboratory equipment and lack of assistant teachers responsible with laboratory resource inventory.

Additionally, they raised concerns about provision of resources and funding to resource the school and upgrade the infrastructure.

5.2 Conclusion

From the findings of the study, it can be deduced that there are adequately trained teachers teaching combined science in schools. Resources are main challenges in schools to promote progressive principles to be effectively employed by science teachers. Workshops and other in-service training need to be done by subject teachers not school head for the benefit of the learners. Given the fact that, there is a dearth of resources required for improvement of school Progressivism and pass rate, teachers should be trained to be creative and innovative so that they can produce their own instructional material and adapt them to suit the needs of individual learners. This can be achieved through in-service training, possibly in conjunction with teacher training institutions.

To achieve science educational goals, the teachers who must be knowledgeable in the various types of needs, need to be armed with knowledge of the use of various appropriate communication skills, enough apparatus and scientific skills. The teachers' role and preparation must include preparing them to reduce the complexity and multiplicity of variables affecting the children, (Fox.N. J, 2008). Hence, the use of stimulation enables the learners to maximize their intellectual potentials.

Furthermore, schools should be aware that science is an experimental learning subject. They have to consider it in their school budget as priority. The teachers must also work on the other children to accept and motivate their colleagues to build their sense of belonging. By implication, the school should ensure that its teachers are prepared to ensure children's liberty, security, and dignity. In line with the above therefore, it is expected that all trained teachers working with children give undivided attention, encouragement, and motivation to learners without allowing any learner to be submerged or neglected in education, especially during practical or experiment lessons.

5.3 RECOMMENDATION

From the study's findings, the following recommendations are made:

- Schools should be engaged into public and private partnership funding for purchasing of apparatus.
 - Ministry of Primary and Secondary to lunch lab construction schemes across rural schools through finding donations.
 - School science laboratories should be sufficiently equipped with laboratory equipment to help accommodate all learners and have all learners in pragmatism.
 - The Ministry of Primary and Secondary Education should articulate a clear policy on inclusion and provide adequate financial support to all the schools to support learners.
 - The ministry should also consider supporting rural schools together with other stakeholders should consider investing in e-learning equipment and facilities to support learners in rural schools.
 - Teachers and heads in regular schools should be assisted to hold in-service programmes and workshops from local, cluster up to District level to equip them with various approaches in handling the learners to help arrest high failure rates.
- Originate learning styles that are learner centric and individually oriented where possible

5.4. AREAS OF FURTHER RESEARCH

An area of further study would be to assess how teachers' behaviour might influence Progressivism principles employment in the teaching of combined science.

Another area of study would be to assess the impact of E- Learning on the learning and teaching of Progressivism principles in combined science.

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APPENDIX

RESEARCH INSTRUMENTS

In this research ,the teacher is going to use Questionnaire, interviews and observations to both learners and teachers to gather data .

My name is Pehliwa Albert; I am currently studying for a Bachelor of Science Degree in Biology with Bindura University of Science Education, Department of Science Education. As part of my degree program I am currently carrying out a research on exploring progressive principles in teaching science on form one learners . This information will only be used for purposes of this study.

INTERVIEWS FOR TEACHERS ON PROGRESSIVE PRINCIPLES IN LEARNING AND TEACHING OF COMBINED SCIENCE FORM ONE.

ETHICAL CONSIDERATIONS:

My name is Pehliwa Albert; I am currently studying for a Bachelor of Science Degree in Biology with Bindura University of Science Education, Department of Science Education. As part of my degree program I am currently carrying out a research on exploring progressive principles in teaching science on form one learners . This information will only be used for purposes of this study. Could you please fill in the interview questions to the best of your knowledge. Do not write your name, and be assured that the data to be collected will be used only in this. You are not compelled to do this exercise and it will be kept confidential and privacy.

INSTRUCTIONS:

- Tick if applicable to show your response .
- You are recommended to respond to all questions .
- Give you views and opinions freely.

The researcher is free to give clarity if there is any need.

Section A: Demographic Data

Sex: Male [] Female []

Age: Below 30 Years []

Between 30 and 40 Years []

Between 40 and 50 Years []

Above 50 Years []

Educational Qualifications

Certificate in Education []

Diploma in Education []

Degreed (With Secondary Education) []

Degreed (Without Secondary Education) []

Working Experience

Less Than Five Years. ()

Above five years. ()

INTERVIEW QUESTIONS

Section B Problems faced in applying progressive methods in schools

1. In your own opinion, what can be the major barrier to the teaching of Progressivism in combined science form one ?.....

.....

.....

2) What might be the causes of difficulties in the teaching of Progressivism principles in combined science ?.....

.....

.....

3) Can you say schools set are uniform across your cluster in terms of resources for doing practicals in science?.....

.....

.....

.....

4) How can you address all these problems in teaching progressive principles in combined science?.....

.....

.....

5) What might be informative resolutions to get ready of the challenges being faced in teaching of progressive principles in schools?.....

.....

.....

SECTION C Methods Used by combined science teachers

6) How effective are the progressive methods used in teaching of combined science form one ?.....

.....

.....

7)Can you evaluate progressive methods employed at your school?.....

.....

.....

8)If it is necessary to dismiss lecture methods for progressive leaow can it be implemented?.....

.....

.....

.....

9) what are your views in the use of experiments and discuss in the learnings and teaching of combined science?.....

.....

.....

10)Can you comment on how you are teaching combined science for progressive at form one level ?.....

.....

.....

SECTION D: Schools facilitation in application of Progressivism principles.

11)in what ways do Your school incorporate real world applications and interdisciplinary connections into the teaching of combined science?.....

.....

.....

12)How does your school facilitate the teaching of combined science ?.....

.....

.....

13)can you clarify how your school intergate and enhanced student engagement and understanding of Progressivism principles in teaching of combined science.....

.....

.....

14)Is it possible for schools to create a collaborative and interactive learning environment in the Combined science classroom, fostering student critical thinking?.....

.....

.....

15)Can you argue that schools are indirectly neglecting combined science department by not creating supportive for progressive learning of combined science?.....

.....

.....

QUESTIONNAIRES FOR LEARNERS ON PROGRESSIVE PRINCIPLES IN TEACHING AND LEARNING COMBINED SCIENCE FORM ONE

ETHICAL CONSIDERATIONS:

The researcher intends to gather data on progressive principles in teaching science on form one Level. Could you please fill in the questionnaire to the best of your knowledge. Do not write your name, and be assured that the data to be collected will be used only in this. Your participation in the study is voluntary and the information you give will be treated as confidential

INSTRUCTIONS:

- The rating below has been prepared so that you can indicate the extend of your agreement with each statement from “Agree, Neutral and Disagree” .
- Put a tick in the appropriate space.
- Neutral indicate that you are uniformed about the item. Can you please respond individually to every item?
- You are advised to respond to all questions if you are an educator.
- Learners are not advised to answer only the first part (sex part) on section A and all questions in other sections.

QUESTIONS

Section A: Demographic Data

Sex: Male [] Female []

Age: Below 30 Years []

Between 10and 13Years []

Between 14 and 16years []

Above 16 ()

SECTION B : Challenges in employment of Progressivism in teaching combined science

1) leaerners are facing challenges in learning of progressive principles in learning of combined science.

Agree ()

Neutral ()

Disagree ()

2) What might be the challenges being faced by learners in applying progressive principles?..... .. ,,,.....

.....
.....

3) Learners are finding solutions in solving problems faced in application of progressive principles in learning of combined science.

Agree () Neutral () Disagree ()

4) From your own opinion, what might be the possible solutions to address problem you are facing in learning progressive principles in combined science?

.....,.....,.....
.....
.....,.....

5a) learners are major barrier towards the implantation of Progressivism in learning of combined science

Agree () Neutral () Disagree ()

Response to either 5b or 5c depending on your response in 5a above.

5b) If yes in what way do learners are barriers to progressive principles in learning of combined science?..... . ,.....

.....,.....,

C)If disagree and neutral what are your views.....,..... . ,.....

.....

Section C : Research Questions

Progressive methods used in schools

6)Teachers are using progressive principles including projects, experiments, teaching form one combined science .

Response : please tick Yes() No ()

7)How progressive principles are being employed by science teachers in teaching and learning combined science?.....

.....

.....

8)Best method of learning science is hands on.

Response: please tick. Yes () No ()

9) in what ways do hands on being used in the learning of combined science form one?.....

.....

.....

10a) Teachers are still practicing lecture methods in teaching and learning of combined science.

Response: please tick.

Yes () No ()

Respond to either 10b or 10c depending on your answer In 10a

10b) If yes can you clarify how lecture methods are being used in the teaching and learning of combined science?.....

.....

10C) If no how do you value your suggestions?.....

.....,

SECTION D :Schools facilitation in application of Progressivism in teaching of combined science

11) Schools promoting progressive principles in the teaching and learning of combined science at your school.

Response: tick. Yes () No ()

12) On your own opinion, in what ways do schools facilitate progressive methods in the teaching and learning of combined science?.....

.....,

.....,

13) Your school has got good facilities that promote conducive Science learning

Response: tick. Yes () No ()

14) How do you regard your school facilities being best for conducive science learning environment?.....

.....,

.....,

15a) Schools are improvising in promoting progressive principles in teaching and learning of combined science.

Response: please tick. Yes () No ()

Response to either 15b or 15c depending on your response in 10a above

15b) If yes, give ways that are being implemented by schools to improve progressivism methods.....

OBSERVATIONS ON PROGRESSIVE PRINCIPLES IN LEARNING AND TEACHING OF COMBINED SCIENCE FORM ONE .

Ethical Considerations

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SECTION B : Observations Guide Table

Issues to observed	AVAILABILITY (yes/no)	COMMENTS
practicals done at school	(Yes/no)	
Progressive methods employed in schools	(Yes/no)	
Projects relates to science	(Yes/no)	

Hands on	(Yes/no)	_____
CALAS	(Yes/no)	_____
Lab availability	(Yes/no)	_____
Qualified teachers	(Yes/no)	_____
Laboratory apparatus	(Yes/no)	_____
Desk infrastructure	(Yes/no)	_____
Normal Teacher to pupils ratio	(Yes/no)	_____
Teachers improvising	(Yes/)	_____
Administration supervision	(Yes/no)	_____
Conducive school set up	(Yes/no)	_____
School supportive	(Yes)	_____

measure s on progressi ve methods	/no)	
Science departm entental file	(Yes /no)	