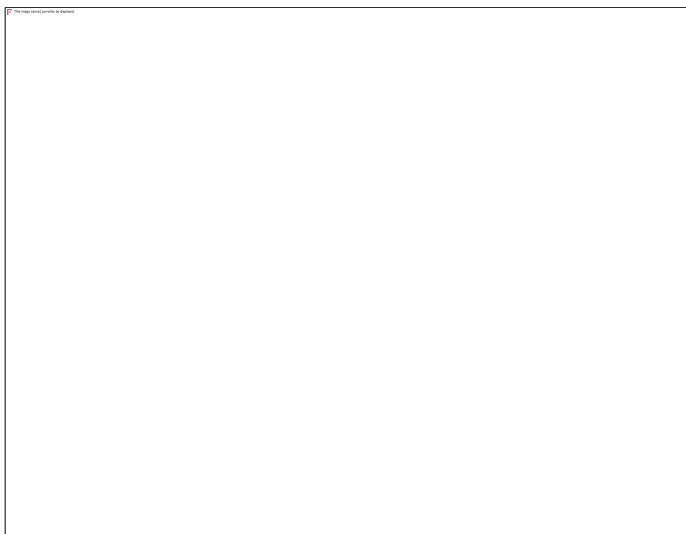


BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE EDUCATION

BACHELOR OF SCIENCE EDUCATION HONOURS DEGREE IN CHEMISTRY



An assessment into the impact of Environmental Management Agency (EMA) in enhancing environmental awareness campaigns in selected schools in Mutare district of Manicaland Province.

By

Sithole Mashanda

B2258666A

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
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CHEMISTRY EDUCATION

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DEDICATION

This research is dedicated to my wife, my daughter Cleopatra and my two sons Mason and Alson who always believe in me.



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I take full responsibility for any errors or omissions in this research project. I hope that this study contributes meaningfully to the existing body of knowledge on environmental awareness campaigns in schools.

ABSTRACT

This research project is an assesment into the impact of Environmental Management Agency (EMA) in enhancing environmental awareness campaigns in selected schools in Mutare district of Manicaland province. The schools are Odzi primary school and Odzi High in Odzi cluster.

This qualitative study explores the impact of the Environmental Management Agency (EMA) in enhancing environmental awareness campaigns in selected schools in Mutare District of Manicaland Province, Zimbabwe. Using observation and in-depth interviews, data was collected from two selected schools, three teachers, and 5 EMA officials. The findings reveal that EMA's interventions have positively influenced environmental awareness among students and teachers, promoting behavioral change and community involvement. However, challenges such as inadequate resources, limited teacher training, and insufficient community engagement were identified. The study recommends that EMA strengthens its partnerships with schools, provides regular teacher training, and enhances community involvement in environmental awareness initiatives. This study contributes to the understanding of effective environmental education strategies in Zimbabwe and informs policy and practice in environmental management.

V ACRONYMS AND ABBREVIATIONS

EMA: Environment Management Agency

MoPSE: Ministry of Primary and Secondary Education

STEM: Science, Technology, Engineering and Mathematics

UNCHE: United Nations Conference on Humans and Environment

UNEP: United Nations Environmental Program

WWF: World Wildlife Fund

ZIMSEC: Zimbabwe School examination Council

SDGs: Sustainable Development Goals



NGOs: Non-Governmental Organization

CBOs: Community Based Organization

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CHAPTER 1: PROBLEM STATEMENT

1.1 Introduction

This chapter carries content under the following headings; introduction, environmental awareness, background of the study,  problem statement, significance of

the study, objectives, research questions, assumptions, delimitations, limitations, definition of key terms and summary.

Points will be explained with references given wherever possible.

1.2 Environmental Awareness Campaigns

The World Wildlife Fund (WWF) {2020} defines environmental awareness campaigns as initiatives that aim to raise public awareness and understanding of environmental issues, promote sustainable behaviors, and inspire individuals and communities to take action to conserve nature and reduce their environmental footprint. This definition highlights the key aspects of environmental awareness campaigns that include education, information, promotion of environmental values and behaviors as well as encouragement of individual and community action. Powers (2018) supported this in his book, 'The overstory' when he emphasized the need for environmental activism and advocacy saying it protects the natural world and promotes sustainability.

Environmental awareness or communication campaigns aim to raise awareness and promote sustainable use of natural resources. On his site, www.gatesnotes.com, Bill Gates supports the idea of pushing for sustainability saying, "Getting to zero emissions is the only way to prevent a climate catastrophe" These campaigns also foster a positive attitude towards environmental issues. Through targeted messaging, campaigns can draw attention to environmental problems and encourage participation. This is an important initiative for existence since according to Kolbert (2014) rate of species loss is currently estimated to be 100 to 1000 times higher than the natural rate.

The constitutive part of environmental campaigns enables citizens to comprehend environmental issues and acquire knowledge. This is supported by Pettitor (2019) who is of the idea that the government and public investment are essential for driving the transition to a low carbon economy, creating jobs and promoting economic growth. This research explores how environmental campaigns use specific tone and diction to trigger images in the audience's minds.

In Africa, numerous environmental acts have led to the establishment of agencies dedicated to environmental preservation. This study focuses on the Environmental Management Agency (EMA), examining the discourses used in their communication awareness schemes to identify signs and symbols that elicit reactions from stakeholders.

1.3 Background of the Study

The environmental movement emerged in the 1960s, transitioning from a techno-scientific to a popular dimension. Ghosh (2016) explains that the shift was necessitated by the fact that literature failed to adequately address climate change as the subject was largely absent from it. Initially, discussions focused on scientists, chemical industries, and governments. However, communities affected by pollution soon began discussing air quality, water, and soil. Such initiatives in which communities take issues into their own hands were strongly supported by authors like G. Thunberg (2019) who observed that there is disproportionate impact of climate change on vulnerable populations including the poor, indigenous communities and future generations. Bacigalupi (2015) also weighs in on that point when he points out that sustainable water practices are essential to life.

According to Roberto (2011), society started emphasizing the importance of a quality environment. Grassroots environmental organizations emerged, shaping the concept of environmental issues. The 1970s saw the environmental discourse become more politicized, with the United Nations Stockholm conference and discussions on population growth. Gilio-Whitaker (2019) pointed out colonisation and imposition of Western values as the major culprits for environmental injustices and erasure of indigenous knowledge and perspectives.

The following decade marked the engagement of businesses in the green discourse, with companies joining the sustainability conversation. The media also joined the green movement in the 1990s. Before these climate positive steps, Rich (2019) observed that the opportunity to address climate change was missed due to political opposition, industry lobbying and public apathy. In support, Klein (2014) blames economic systems saying they are not compatible with the need to address climate change.

The evolution of environmental perspectives has led civil society organizations to shift from radical conservationist views to collaborative partnerships with corporations on environmental responsibility programs. Environmental perspectives are socially constructed and influenced by human interactions with nature. Over time, the discourse surrounding environmental issues has changed, driving policy shifts.

Since 2006, climate change has become a prominent environmental concern, garnering significant media attention through events, reports, and documentaries.

Traditional environmental awareness campaigns rely heavily on information dissemination. However, to effectively communicate climate change, more sophisticated approaches are necessary. This includes utilizing branding strategies to make climate-friendly behaviors desirable.

Climate change affects citizens globally, and its reporting in mass media has been analyzed. Miller (2017) says that climate change has become a major drive to migration and displacement. Findings indicate that scientists tend to emphasize environmental problems, while politicians and special interests focus on solutions. Hawken (2017) thinks that there is need to shift from problem focused approach to solution focused approach in addressing climate change. A European Commission survey revealed that climate change is the top environmental concern among EU citizens. This according to Meynen(2020) is exacerbated by the extractive industries and cooperate power structures that drive environmental degradation and human rights abuses

Historically, the 1972 United Nations Conference on Human and Environment (UNCHE) marked a turning point in recognizing the global nature of environmental problems. This led to increased international cooperation and the establishment of agencies like the United Nations Environmental Program (UNEP).

It is in this backdrop that the researcher has noticed some areas of environmental concern in Odzi area of Mutare district in Manicaland province which prompted me to carry out this research. These areas include the mining where artisanal miners are degrading land without any reclamation. Mining companies are  dumping contaminated waste into

Odzi river and some of the claim owners are improperly disposing poisonous substances like cyanide which at one event killed a number of cattle. ZINWA is now being overwhelmed by the levels of combination in

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Odzi river, the water source. The water has become so contaminated that even after treatment it is murky. This is a sign that treatment chemicals are no longer effective and speculation is that the outbreak of dysentery that was once experienced among school pupils was a result of the high levels of contamination of water in Odzi river.

This research is crucial as it helps environmental agencies improve their communication strategies thereby ensuring that the problems being experienced in Odzi are circumvented.

1.4 Statement of the problem

A number of activities take place in Odzi area that weigh heavily on an already strained environment and these include gold panning, illegal waste disposal by mining companies, littering from empty plastic and can beverage bottles and littering from improper disposal of used pampers and condoms. Everywhere you go you see a pathetic site either through litter or land degradation. There have been reports in our area of ECD children blowing used condoms and playing around with them. This poses high risk of them contracting STIs and stomach upsets. One grade 5 boy fell into a disused mine shaft and was trapped there only to be discovered by passersby after two days. Livestock also get injured from falling into those shafts. Odzi river is the source of drinking water but mining companies dump waste in that river. There was a dysentery outbreak once where almost everyone got sick. The ZINWA water works is being overwhelmed by the levels of contamination in the river. Even after treatment the water from the taps will be must. Some cattle once died and it was later discovered that the cause of death was cyanide poisoning. It is against this backdrop that I have thought of carrying out an investigation into the impact of EMA in enhancing environmental awareness campaigns in selected schools in Mutare district of Manicaland.

1.5 Significance of the study

1.5.1 Students



The research will result in increased environmental knowledge and awareness month n students. Their critical thinking and problem solving skills develop as they analyze environmental issues and develop solutions. Their Communication and collaborative skills are also developed as they work together to design and implement environment awareness campaigns. Learners' attitudes and behavior shift to become pro-environment. They experience positive behavior changes like waste reduction, water conservation and use of public transport. The project will also benefit learners in terms of community engagement and participation. Learners will be encouraged to engage with their local community, promoting environmental awareness and action among community members. Also, learners will be empowered to take

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ownership of environmental issues, developing a sense of responsibility and agency I'm addressing these challenges. The project's findings will be of great importance to students.

1.5.2. Policymakers

The project's findings will provide policymakers with empirical evidence to inform the development of environmental education policies and programs. The study's results can help policymakers refine the environmental education curriculum, ensuring it is relevant, effective, and aligned with national and international environmental goals. The project's outcomes can inform policymakers on how to design and implement effective environmental awareness campaigns, promoting a culture of environmental conservation among citizens. By understanding the impact of EMA on environmental awareness, policymakers can develop strategies to promote sustainable development, balancing economic, social, and environmental needs. The project's findings can help policymakers allocate resources more efficiently, ensuring that environmental education programs and initiatives receive adequate funding and support. By evaluating the impact of EMA on environmental awareness, policymakers can identify best practices and areas for improvement, ultimately enhancing the effectiveness of environmental education programs.: The project's outcomes can help policymakers ensure that environmental education programs align with national environmental policies and commitments. By investigating the impact of EMA on environmental awareness, policymakers can contribute to international environmental agendas, such as the United Nations' Sustainable Development Goals (SDGs).

1.5.3. Environmental Management Agency (EMA)



The project's findings will provide EMA with data-driven insights to inform their environmental awareness campaigns, ensuring they are more effective and efficient. By understanding the impact of EMA in enhancing environmental awareness, the organization can refine its campaign design, messaging, and delivery to better resonate with the target audience. The project's outcomes will demonstrate the effectiveness of EMA's environmental awareness campaigns, enhancing the organization's credibility and reputation. By conducting an investigation into the impact of EMA, the organization demonstrates its commitment to transparency and accountability, which can foster trust among stakeholders. The project's findings will inform EMA's strategic planning, ensuring that the organization's goals and objectives are aligned with the needs of the target audience. By understanding the impact of EMA in enhancing environmental awareness, the organization can allocate resources more effectively, prioritizing initiatives that yield the greatest impact. The project's outcomes can help EMA build

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partnerships with other organizations, government agencies, and stakeholders, amplifying the organization's impact and reach. By demonstrating the effectiveness of EMA in enhancing environmental awareness, the organization can engage in collaborative programming with other stakeholders, leveraging resources and expertise to achieve common goals. The project's findings will contribute to the development of environmental education in Zimbabwe, informing the design and implementation of environmental education programs. The study's outcomes can inform policy and practice in environmental education, ensuring that programs are effective, relevant, and aligned with national and international environmental goals. The project is therefore an essential undertaking to EMA operations.

1.5.4. Community

The project's outcomes can lead to increased environmental awareness among community members, promoting a culture of conservation and sustainability. By investigating the impact of EMA in enhancing environmental awareness, the project can inform strategies for improving waste management practices in the community. The project's findings can contribute to the conservation of natural resources in the Mutare district, such as water, land, and biodiversity. By promoting  environmental awareness and

conservation, the project can contribute to improved public health in the community, reducing the risk of environmental health hazards. The project's outcomes can lead to an enhanced quality of life for community members, as a result of improved environmental conditions and increased access to natural resources. The project's findings can inform strategies for job creation and income generation in the community, through environmentally sustainable initiatives. By promoting environmental conservation and sustainability, the project can contribute to the development of sustainable livelihoods in the community. The project's outcomes can lead to increased community engagement and participation in environmental conservation efforts, promoting a sense of ownership and responsibility. By investigating the impact of EMA in enhancing environmental awareness, the project can facilitate inter-generational knowledge transfer, ensuring that environmental knowledge and practices are passed down to future generations. The project is therefore of great importance to Mutare residence.

1.5.5 Researcher

The project's findings will contribute to the existing literature on environmental education, EMA, and environmental awareness campaigns. The study will provide new insights into the impact of

EMA on environmental awareness campaigns, advancing the researcher's understanding of this topic. Conducting this project will help the researcher develop and refine their research skills, particularly in the areas of data collection, analysis, and interpretation. The project's outcomes can lead to publications, presentations, and other forms of dissemination, increasing the researcher's visibility and recognition within their field. The project's findings and the researcher's expertise can create opportunities for career advancement, such as promotions, grants, or new job opportunities.: The project may involve collaboration with stakeholders, experts, and organizations, providing opportunities for the researcher to build relationships and networks. The project's outcomes can lead to partnerships and future research collaborations, expanding the researcher's professional network and opportunities. Completing this project can boost the researcher's confidence and self-efficacy, particularly in their ability to design, conduct, and disseminate research. The project requires a range

of skills, such as project management, data analysis, and communication, which are transferable to other areas of the researcher's career.

1.6 Objectives

This study was guided by the following objectives;

- i) assessing the current level of environmental awareness among students and teachers in selected schools in Mutare district, ii) examining the role of EMA in promoting environmental awareness campaigns in selected schools, iii) investigating the impact of EMA's environmental awareness campaigns on students' and teachers' attitudes towards environmental conservation, iv) identifying the challenges faced by EMA in implementing environmental awareness campaigns in selected schools and,
- v) proposing strategies for improving the effectiveness of EMA's environmental awareness campaigns in selected schools.

1.7 Main research question

What is the impact of Environmental Management Agency (EMA) in enhancing the environmental awareness campaigns in selected schools in Mutare district of Manicaland?



1.7.1 Sub-research questions

- i) What is the current level of environmental awareness among students and teachers in selected schools in Mutare district?", ii) " How does EMA promote environmental awareness campaigns in selected schools?" iii) "What is the impact of EMA's environmental awareness campaigns on students' and teachers' attitudes towards environmental conservation?" iv)"What challenges does EMA face in implementing environmental awareness campaigns in selected schools?" and,
- v) "What strategies can be proposed to improve the effectiveness of EMA's environmental awareness campaigns in selected  schools?"

1.8 Assumptions

EMA faces challenges addressing environmental management in Zimbabwe. Also, EMA's campaign discourses lack perfection and fail to effect meaningful change. Another assumption is that EMA focuses on waste management, neglecting other environmental issues and the last one is that EMA has not achieved its environmental challenge objectives

1.9 Delimitations

The study concentrated on schools in Mutare district of Manicaland province in Zimbabwe. It looked at grade 6 teachers and learners especially at Odzi primary school. 3 teachers and 17 learners formed the target group.

1.10 Limitations

1.10.1 Time

The researcher carried out the study during normal working hours. The respondents also had to juggle between normal lessons and responding to the project tools. This imposed a time factor challenge on the research.

1.10.2 Finance

The researcher came up with funds for printing out interview materials. He also met transport costs in situations where he has to travel to neighbouring schools. The researcher sought for money that was used for airtime to communicate with participants and stakeholders for the smooth flow of the research. He also has to buy bundles for research on the Internet.

1.10.3 Geographical limitation

Some neighboring schools are far away and had to be accessed on foot. The walk involved going through mountain tracks that pose a risk of animal attack or robbery. For some of the schools there are rivers that were crossed that posed risk of drowning and crocodile attack.

1.11 Definition of key terms

1.11.1 Environmental Awareness



UNEP (2019) defines environmental awareness as the understanding and recognition of the importance of environmental conservation and the actions needed to protect the environment. On the other hand, EPA (2020) defines it as the process of educating people about the importance of conservation and sustainability, and the actions they can take to reduce their impact on the environment. It is consciousness over environmental issues such that people use resources sparingly and where possible use alternative energy sources that limit carbon emissions.

1.11.2 Environmental Management Agency (EMA)

The Environmental Management Agency (EMA) is a parastatal organization responsible for promoting sustainable environmental management practices in Zimbabwe and that's according to EMA (2020). The government of Zimbabwe (2019) views it as a government agency responsible for protecting the environment and promoting sustainable development in Zimbabwe.

□ 1.11.3 Environmental Awareness Campaigns

UNESCO (2017) defines environmental awareness campaigns as programs designed to educate and inform people about environmental issues and promote behavioral change. IUNC (2019) on the other hand views environmental awareness campaigns as initiatives aimed at raising public awareness and understanding of environmental issues, and encouraging individuals to take action to protect the environment. They are public gatherings where masses are appraised on ways of protecting the environment to ensure sustainability. This can be done in form of road shows at shopping centres, community halls or community grounds.

1.11.4 Sustainable Development

Sustainable development is defined as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs as is explained

by Brundtland Commission (1987). The UNDP (2020) defines it as a holistic approach to development that balances economic, social, and environmental considerations to ensure a livable future for all. Basically it's development that is not concerned

about only the present but also considers that generations after us also need to use the same resources that we are using right now. There is therefore need to use resources sparingly and also to reclaim them where they will have dwindled.

1.11.5 Environmental Education

UNESCO (1978) defines environmental education is a process aimed at developing a population that is aware of, and concerned about, the environment and its associated problems. Environmental education is a learning process that increases public awareness and knowledge about environmental issues, and encourages individuals to take action to protect the environment that's according to EPA (2020). Environment protection ideas are given to people so that their ways of life become aligned with conserving resources like water and energy sources conservatively.

1.12 Summary

This chapter was focused on the assessment of environmental awareness campaigns of EMA in selected schools, background of the study, problem statement, significance of the study, objectives, research questions, assumptions, delimitations, limitations, definition of key terms and this summary. The next chapter is chapter 2 which is about literature review.



CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter looks at EMA and its environmental awareness campaigns under the following headings; this introduction, review of current level of awareness, role of EMA, impact of EMA's awareness campaigns, challenges faced by EMA, strategies to improve environmental awareness campaigns, theory framework, gaps in literature and finally, the summary of the chapter.

2.2 What is the current level of awareness students and teachers in schools in Mutare District?

The current level of environmental awareness among students and teachers in schools in Mutare district is a crucial aspect to explore.

2.2.1 Students' Environmental Awareness

Since EMA has done some activities with learners that include dramas, quizzes and environment information dissemination sessions with the learners before, it is assumed that the learners have basic understanding of environment protection matters. Currently they are expected to tell that careful use of resources like firewood, water and minerals is important for sustainability. They know about desertification and river siltation of rivers and dams as well as its effects. They know about land, air and water pollution. This knowledge is based on the fact that they do Agriculture and Science lessons whose syllabi cover those aspects. The learners' exercise books bear testimony to this aspect. Kollmuss and Agyeman (2002) supports this when he reiterates that, "Learners' knowledge and understanding of environmental issues are essential for promoting pro-environmental behavior and sustainable development."

2.2.2 Teachers' Environmental Awareness

Teachers have got a lot of information on environment awareness since they are experienced in teaching about the environment when they deliver lessons especially in Science, Agriculture and Social Studies lessons. Some of them have even specialized in environmental studies at higher levels like colleges and universities. They are also trained to interpret syllabi including their areas that include environmental studies. They are therefore rich in information about environmental matters. Evidence to this is when teachers teach about environment matters at assemblies and in classrooms when collegial supervision is done. This is supported by



Rickinson (2001) who is quoted saying, "Teachers' knowledge and attitudes towards

environmental education are crucial in determining the effectiveness of environmental education programs."

2.2.3 Overall Environmental Awareness

While there is some level of environmental awareness among students and teachers, there is still room for improvement. Enhancing environmental awareness is crucial for promoting sustainable development and environmental conservation. UNESCO (2017) 's report emphasizes the importance of environmental education and provides learning objectives for teachers and learners. Such documents ensures that learners stay in line with issues that bring about sustainability. EMA (2019) came up with a strategy document that outlines the importance of environmental education and awareness in Zimbabwe, and provides guidance for teachers and learners. Armed with such materials teachers and learners are definitely working towards set targets in as far as environmental sustainability is concerned.

2.3 What is role of Environmental Management Agency (EMA) in schools in Mutare District?

The Environmental Management Agency (EMA) is a parastatal organization responsible for promoting sustainable environmental management practices in Zimbabwe. EMA's mandate includes promoting environmental awareness and education, enforcing environmental laws and regulations as well as providing technical guidance and support for environmental management that's according to EMA (2019). EMA has implemented various environmental awareness campaigns in schools in Mutare district, including, established environmental clubs in schools to promote environmental awareness and education among students, providing environmental education materials and training to teachers and students in schools, organizing

clean-up campaigns in schools and surrounding communities to promote waste management and environmental conservation and hosting environmental competitions, such as essay writing and poster competitions, to encourage students to think creatively about environmental issues. EMA (2019) is in support of the above ideas.

2.4: How impactful is EMA's Environmental Awareness Campaigns in schools in Mutare District?

EMA's environmental awareness campaigns in schools in Mutare district have had a positive impact, including; students and teachers showing an increased understanding of environmental issues and the importance of environmental conservation, schools implementing effective waste management systems, reducing litter and promoting a cleaner environment and encouragement of the community to engage and participate in environmental conservation efforts.

2.5 What are the challenges faced by EMA's Environmental Awareness Campaigns in schools in Mutare District?

Despite the positive impact of EMA's environmental awareness campaigns, EMA (2019) says there are challenges that need to be addressed that include, limited financial and human resources, making it challenging to implement and sustain environmental awareness campaigns, lack of basic infrastructure, such as libraries and computer labs in some schools in Mutare district making it difficult to implement environmental education programs and also competing priorities like academic performance.

2.6 Which strategies can EMA put in place to improve Environmental Awareness and encourage community involvement?

2.6.1 Enhance Collaboration and Partnerships

EMA can strengthen partnerships with schools by fostering closer relationships with schools to ensure that environmental campaigns are aligned with their curricula and priorities that's according to EMA (2019). They may also engage with local communities, including parents, local leaders, and businesses, to promote environmental aware

2.6.2 Partnering with other

organizations

Partnering with organisations such as NGOs, CBOs, and government agencies leverages resources, expertise, and networks as is suggested by Mubvami and Mashizha (2020). They say EMA can develop effective communication strategies through use of diverse communication channels. Use of a wide range of communication channels, including social media, radio, television, and print media ensures that their message reaches different audiences and age groups. It should also develop engaging educational materials such as posters, brochures, and videos, to capture students' attention and promote learning. Two-way communication should be

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fostered. There should be dialogue between EMA, schools, and local communities to ensure that environmental campaigns are relevant, effective, and responsive to local needs.

2.6.3 Providing training and capacity programs

Moyo and Gadzirai (2023) are of the idea that EMA should provide training and capacity-programs for teachers, school administrators, and local community leaders to enhance their knowledge, skills, and confidence in promoting environmental awareness. It should also offer incentives and rewards for schools, students, and local communities that demonstrate exceptional environmental awareness and conservation practices. It should recognize and celebrate successes of schools, students, and local communities in promoting environmental awareness and conservation.

2.6.4 Leverage Technology and Innovative Approaches

EMA should utilize digital platforms and social media to promote environmental awareness, engage with students and teachers, and share educational resources. The UNEP (2019) agencies should also develop interactive and immersive educational programs such as virtual reality experiences, games, and quizzes, to make environmental education more engaging and effective. Hands-on and project-based learning should be incorporate to enable students to apply theoretical knowledge to real-world environmental challenges.

2.6.5 Monitor, Evaluate, and Improve

EMA should establish monitoring and evaluation frameworks to assess the effectiveness of environmental campaigns and identify  areas for improvement. It should also

conduct regular assessments and surveys to gauge students' and teachers' knowledge, attitudes, and practices regarding environmental conservation. The agency should also use feedback to refine and improve environmental campaigns, ensuring they remain relevant, effective, and responsive to local needs.

2.7 Theoretical Frameworks

2.7.1 Environmental Education Framework

This framework emphasizes the importance of environmental education in promoting environmental awareness, knowledge, attitudes, and behaviors. It is applied to investigate the effectiveness of EMA's environmental awareness campaigns in promoting environmental education and literacy among students and teachers in selected schools.

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2.7.2 Health Belief Model (HBM)

The HBM suggests that an individual's behavior is influenced by their perceived susceptibility to a health threat, perceived severity of the threat, perceived benefits of taking action, and perceived barriers to taking action. This model can be adapted to investigate how EMA's environmental awareness campaigns influence students' and teachers' perceived susceptibility to environmental threats, perceived severity of environmental threats, perceived benefits of environmental conservation, and perceived barriers to environmental conservation.

2.7.3 Theory of Planned Behavior (TPB)

The TPB proposes that an individual's behavior is determined by their intention to perform the behavior, which is influenced by their attitudes, subjective norms, and perceived behavioral control. It can be used to investigate how EMA's environmental awareness campaigns influence students' and teachers' attitudes, subjective norms, and perceived behavioral control regarding environmental conservation.

These theoretical frameworks can provide a foundation for understanding the complex relationships between EMA's environmental awareness campaigns, students' and teachers' environmental knowledge, attitudes, and behaviors, and the broader social and environmental context.

2.8 Gaps in literature

There may be a lack of empirical studies that investigate the impact of EMA's environmental awareness campaigns on specific communities or populations. Also, most studies on environmental awareness campaigns may focus on urban areas, leaving a gap in understanding the impact of such campaigns in rural or peri-urban areas. Research may focus on general environmental awareness, but neglect specific environmental issues such as climate change, pollution, or conservation. There is also an issue that studies may overlook the impact of environmental awareness campaigns on marginalized communities, such as indigenous populations, women, or children. Most studies may be cross-sectional, leaving a gap in understanding the long-term impact of EMA's environmental awareness campaigns. The research may not adequately explore the role of technology, such as social media or mobile apps, in

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enhancing environmental awareness campaigns. Another issue is that studies may focus on knowledge and awareness, but neglect the impact of environmental awareness campaigns on behavior change. Also, the research may overlook the importance of stakeholders and partnerships in enhancing environmental awareness campaigns and there may be a lack of comparative studies that examine the impact of different environmental awareness campaigns or strategies. Studies may also neglect the impact of environmental awareness campaigns on specific age groups, such as children or youth. By addressing these gaps, your research project can contribute to a deeper understanding of the impact of EMA's environmental awareness campaigns and provide insights for improving their effectiveness.

2.9 Summary

This chapter looked at EMA and its environmental awareness campaigns under the following headings; this introduction, review of current level of awareness, role of EMA, impact of EMA's awareness campaigns, challenges  faced by EMA, strategies to improve

environmental awareness campaigns, theory framework, gaps in literature and finally, the summary of the chapter. Chapter 3 is next and will look at research methodology.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology used to investigate how the Environmental Management Agency (EMA) represents environmental awareness communication campaigns. The study employed a qualitative approach, using sampling, archival research, and participant observation to collect data. The chapter is written under the following headings; introduction, methodology, qualitative approach, research design, research paradigm, research population, sampling technique, sample size, sampling methods, data collection methods, data presentation analysis and summary.

3.2 Methodology

According to Creswell (2014), research methodology involves "the plans and procedures for collecting and analyzing data" (p. 4). It encompasses the research design, sampling strategy, data collection methods, data analysis techniques, and the ethical considerations involved in the research process. Kothari (2004) defines research methodology as "the science of studying how research is done scientifically" (p. 1). It involves the application of scientific principles and methods to investigate a research problem or question.

Research methodology typically includes components like research design which is the overall plan or structure of the research study as  is explained by Creswell (2014).

Kothari (2004) gives the other component of methodology as sampling strategy which is the method used to select participants or cases for the study. Data collection methods is another component which involves the techniques used to gather data, such as surveys, interviews, or observations according to Creswell (2014). The methods used to analyze and interpret the data, such as statistical analysis or thematic analysis is called data analysis technique according to Kothari (2004). Ethical consideration involves principles and guidelines that govern the conduct of research, such as informed consent and confidentiality that's according to Creswell (2014). The target group will have every aspect of interviews and observations explained to them by the researcher so that they partake in the activity knowing fully well what will be going on.

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3.3 Qualitative Approach

According to Patton (2002), qualitative research is an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem." Patton emphasizes that qualitative research focuses on gaining a deeper understanding of a particular phenomenon or issue. On the other hand, Creswell (2014) defines qualitative research as "an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem." Creswell highlights that qualitative research involves collecting and analyzing non-numerical data, such as text, images, and observations, to gain a richer understanding of the research context. Both definitions emphasize the importance of exploring and understanding the meaning and context of a particular phenomenon or issue, which is a hallmark of qualitative research. Qualitative research involves collecting and analyzing nonnumerical data. This study used a case study approach, examining EMA's environmental awareness campaigns in Zimbabwe. That is the method that was used during the research on a target group from Odzi primary and secondary schools and made up of 17 learners and 3 teachers.

3.4 Research design

According to Creswell (2014), "A research design is a plan for collecting and analyzing data to answer research questions or test hypotheses. Creswell emphasizes that a research design provides a framework for the entire research process, including the research question, sampling strategy, data collection methods, and data analysis procedures. On the other hand Leedy and Ormrod (2015) define research design as the overall strategy or blueprint that guides the collection, analysis, and interpretation of data. They highlight that a research design involves making deliberate decisions about the research approach, methods, and procedures to ensure that the research objectives are achieved. Both definitions emphasize the importance of having a clear plan or blueprint for conducting research, which is essential for ensuring the quality and validity of the research findings. Generally, a research design lays out what I can term the action plan. It spells out the methods to be used and how they are going to be employed. This research employed case study which according to an extract from the Wikitionary is a research performed in detail on a single individual, group, incident or community, as opposed to, for instance, a sample of the whole population. A case study is an in-depth examination of a specific

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phenomenon or organization. A target group of learners and teachers from Odzi area schools in Mutare district will form that group. This study focused on EMA's awareness campaigns, analyzing their discourses, signs, and symbols.

3.5 Research paradigm

According to Kuhn (1970), a research paradigm is a set of beliefs, values, and practices that define a research community and shape its research activities. Kuhn emphasizes that a paradigm provides a framework for understanding and interpreting the world, and it influences the research questions, methods, and theories used by researchers. On the other hand, Guba and Lincoln (1994) define a research paradigm as a set of basic beliefs (or metaphysics) that deals with ultimate or first principles. It encompasses a worldview that defines the nature of reality, knowledge, and values. The highlight that a paradigm provides a lens through which researchers view the world and interpret data. Both definitions emphasize the idea that a research paradigm is a broad framework  that shapes researchers' beliefs,

values, and practices, and influences the way they approach research. In general, research paradigm is how a researcher views issues at hand and this attribute will contribute to the direction and the speed of the research.

3.6 Research Population

According to Creswell (2014), The research population consists of all individuals or cases that the researcher wants to study and draw conclusions about." Creswell emphasizes that the research population is the entire group of individuals or cases that the researcher is interested in understanding or describing. According to Neuman (2011) it is the entire set of individuals or cases that a researcher aims to study, and from which a sample may be drawn. Neuman highlights that the research population provides the context for the research study and serves as the basis for selecting a sample. Both definitions emphasize that the research population is the entire group of individuals or cases that the researcher is interested in studying and understanding.

The research population consisted of 17 learners and 3 teachers picked using systemised random sampling from Odzi primary and secondary schools.

3.7 Sampling techniques

According to Creswell (2014), sampling techniques are procedures used to select a subset of individuals or cases from a population, in order to make inferences about the population. Creswell emphasizes that sampling techniques are essential in research to ensure that the sample is representative of the population. Neuman (2011) defines sampling techniques as "methods used to select a sample of individuals or cases from a population, with the goal of making accurate inferences about the population. Neuman highlights that sampling techniques are crucial in research to minimize bias and ensure the generalization of the findings. Both definitions emphasize the importance of sampling techniques in research to select a

representative sample from the population and make accurate inferences about the population. The technique that I used is

Stratified random sampling was used to select a representative sample of schools from different strata like urban, rural or private. In this case the rural set-up was used. The justification is that this technique ensured that the sample was representative of the population and minimizes bias. Cluster Sampling technique will also be used to select a sample of schools from a cluster (e.g., schools in a specific ward or district). This technique is useful when the population is scattered or difficult to access. The two schools that were picked; Odzi primary and secondary were used to represent the whole cluster meaning that it will be assumed that observations and responses given by the learners and teachers there will be the general picture for the whole cluster. Systematic random sampling was used to select a sample of students or teachers from a list of schools. This technique ensures that every individual has an equal chance of being selected. The results and observations will therefore be representative of the whole population.

The researcher was always on the lookout for pointers during the research period noting observations on his checklist and field note book so that the collected information may later be coded, categorized and interpreted. During all his operations, the researcher ensured that informed consent was obtained from participants, confidentiality and anonymity were maintained and also that observations did not disrupt normal school activities

3.8 Sample Size

According to Creswell (2014), Sample size refers to the number of individuals or cases selected from a population to participate in a study. Creswell emphasizes that the sample size should be

sufficient to provide reliable and generalizable results. Neuman (2011) defines sample size as the number of units (e.g., individuals, organizations, events) selected from a population for the purpose of making inferences about the  population." Neuman highlights that

the sample size should be large enough to provide a representative sample of the population, but not so large that it becomes impractical or expensive. Both definitions emphasize the importance of selecting a sample size that is sufficient to provide reliable and general results, while also considering practical and economic constraints.

3.9 Research instruments

To collect data for this study, two primary research instruments were employed which are;

3.10.1 Interviews

Semi-structured interviews were conducted with key informants, including teachers, school administrators, and EMA officials. The interviews aimed to gather in-depth insights into the impact of EMA's environmental awareness campaigns in selected schools. Interview guides were developed to ensure consistency and comprehensiveness in the data collection process. The guide consisted of open-ended questions that explored the respondents' experiences, perceptions, and opinions regarding EMA's environmental awareness campaigns.

Advantages of Interviews

i) -Creswell (2014) is of the idea that interviews provide rich, qualitative data that can offer detailed insights into participants' thoughts, feelings, and experiences.

ii) -Allows researchers to gather personal perspectives and opinions from participants, which can be valuable in understanding environmental awareness campaigns that's according to Kvale (2007).

iii)- According to Creswell (2014), interviews can be conducted in various settings, such as inperson, phone, or video calls, making it easier to reach participants. The interviews for this research were conducted in person.

Disadvantages of Interviews

- I)- Interviews are subjective, and participants' responses may be influenced by their personal biases and experiences (Kvale, 2007).
- ii) Conducting interviews can be time-consuming, especially when transcribing and analyzing the data (Creswell, 2014).
- iii) - Interviews may be prone to sampling bias, as participants may not be representative of the larger population (Kvale, 2007).

3.10.2 Observation

Participatory observation was employed and this involved observing environmental awareness campaigns and activities conducted by EMA in selected schools. This means the researcher was actively involved in the activities that the target group were engaged in. He interacted with the teachers and learners of course not in a way to disrupt the flow of their activities. The observation aimed to gather first hand information on the implementation and impact of EMA's environmental awareness campaigns. An observation checklist was developed to ensure that all relevant aspects of the environmental awareness campaigns were observed and recorded. The checklist consisted of items related to campaign implementation, student participation, and overall impact.

Advantages of Observation

1. Observation allows researchers to collect data in a more objective manner, as it is based on observable behaviors and actions (Creswell, 2014).
2. Observation provides a contextual understanding of environmental awareness campaigns, as researchers can observe the campaigns in action (Kvale, 2007).
3. Observation can be non-intrusive, as researchers can collect data without interfering with the campaign activities (Creswell, 2014).

Disadvantages of Observation

1. Limited scope: Observation may have a limited scope, as researchers can only observe a specific campaign or event (Kvale, 2007).
2. Time-consuming: Observation can be time-consuming, especially when collecting and analyzing the data (Creswell, 2014).
3. Interpretation bias: Observation data may be prone to interpretation bias, as researchers may interpret the data based on their own perspectives (Kvale, 2007).

By using a combination of interviews and observation, this study aimed to gather a comprehensive understanding of the impact of EMA's environmental awareness campaigns in selected schools in Mutare district. Combining the two methods will minimise errors or bias in findings and conclusions thereby ensuring more accurate findings. Two is definitely better than one.

3.11 Data presentation and analysis

Interviews

The qualitative approach was used to investigate the impact of EMA in enhancing environmental awareness campaigns in selected schools in Mutare district of Manicaland province. Themes were used to present findings for an example 'What kind of environmental awareness are common through EMA campaigns?' and 'How do EMA communication campaigns represent and promote environmental awareness. Each theme scored 0 to 5 marks depending on the degree of the response being pro EMA or not. The researcher used his own discretion in the awarding of marks using themes that will have come out of the research questions. An overall mark was calculated and that is the one that will be used to give an



assessment of EMA environment awareness campaigns. Further data presentation and analysis on interview is in chapter 5.

Observations

A number of observations of the teachers and learners were made by the researcher during assembly time from 0715hrs and 0730hrs, break time from 1000hrs to 1030hrs and lunch time

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from 1300hrs to 1400hrs. Science lessons were also observed in classrooms in-between the times mentioned where learners and teachers' activities were noted. The general observation made was the lack of proper tools for effective and innovative delivery of lessons. The teachers and learners were seen trying by all means to improvise and get things going, sharing the little that they had but with difficulty. The enthusiasm displayed by the teachers and learners helped to play down the effects of the shortages of tools. A good example is a field trip in which erosion points were identified and field with half bricks and stones. This showed a sign of being resourceful. Instead of crying for tools and equipment whilst sitted, they were waiting for the acquisition of such whilst making use of available resources to get things going. It was also noted that the teachers could make use of further training to effectively integrate education 5.0 principles into their teaching practices The results are tabulated in appendix F which is an observation guide found on page 37.

3.12 Summary

The chapter looked at research methodology under the following headings; introduction, methodology, qualitative approach, research design, research paradigm, research population, sampling techniques, sample size, sampling methods, data collection methods, data presentation and analysis and lastly this summary paragraph. The next chapter will look at data presentation, interpretation and analysis.

CHAPTER 4: DATA PRESENATATION, INTERPRETATION AND ANALYSIS

4.1 Introduction

This chapter is on data presentation, interpretation and analysis. Points were raised under the following headings; data presentation, interview responses, themes emerged, data analysis, findings and discussion.

4.2 Data Presentation using interviews and observation

4.2.1 What is the current level of environmental awareness among students and teachers in selected schools in Mutare district?

Most of the interviewees were forthcoming and anxious to exhibit every little bit of information that they had on the subject of environment awareness. This helped the research a lot because the researcher was exposed to a lot because of information for use to formulate findings. Here are some of the responses for the above question;

Odzi community is showing awareness through using resources sustainably and participating in clean up campaigns. (T3)

Another comment was, “We were taught that we should not drop litter everywhere but we should burn it in incinerators ” (Student 14, 15 and 16)

L 4 and L5 boldly indicated that *“we were taught to save water and to avoid contaminating water bodies”*

Observations by the researcher revealed information that contradicts interview information. When learners started school the school yard and classroom floors were clean but soon after break there was litter everywhere. The learners have been seen not to be practicing what they speak. They know what is supposed to be done but have difficulties practicing that. This diluted their interview mark.

4.2.2 How does EMA promote environmental awareness campaigns in selected schools?

The discovery was that some activities have been done since interviewees still remembered a number of them. Here are some of the responses that they gave to the above question;

- *EMA has helped us to understand the importance of protecting the environment through their visits to the school and the community at large where they had face to face discussions with learners and residences.(Teacher 2)*



- *EMA has been effective in it's environmental awareness campaigns as evidenced by the various methods that they have used to drive their messages that include road shows, broadcasting and erecting billboards.* (Teacher 1)

- *EMA people have done a lot in terms of making us aware of environmental conservation conservation through teaching us ways of safely disposing litter and recycling.* (Student 1, 2 and

3)

-EMA works closely with schools to develop and implement environmental education programmes, providing resources and support to enhance environmental awareness among students and teachers. (EMA official 1)

It has been observed that although EMA is carrying out it's campaign work, that is not translating into good environment attitudes and behaviours. Throwing of empty packets and bottles on the ground means the learners had missed some environment teachings.

4.2.3 "What is the impact of EMA's environmental awareness campaigns on students' and teachers' attitudes towards environmental conservation?"

- *"We have seen a significant improvement in student awareness and involvement in environmental activities since EMA started their awareness campaigns"* (Teacher 3)

"EMA could provide more outreach programmes, provide more educational resources and involve us in environmental projects to make learning more interactive and fun" (Students 1, 2 and 3)

Teacher 2 and teacher 3 gave responses to interview questions showing a general view supporting EMA activities. They explained that the agency activities have managed to inculcate increased awareness of environmental awareness. These two teachers got 3 and 4 marks out of 5 respectively. Teacher 1 was of the view that EMA has done exceptionally well in it's environmental awareness campaigns exhausting all ways that can be used in that regard. This teacher got 5/5 and the average of the teachers here was 4.

Observations were that there was diligence on the part of the teachers to ensure that they place litter in bins or designated places. Some of the learners are the once that were problematic because they went about throwing litter willy-nilly.

4.2.4 "What challenges does EMA face in implementing environmental awareness campaigns in selected schools?"

"Limited resources, lack of expertise and inadequate infrastructure are challenges that I face.

EMA could provide more resources, training and support to help us overcome these challenges"(Teacher 3)

Learner 17 responded to interview questions in a way that showed that EMA was doing little in as far as increasing awareness of people in Odzi in environmental issues through carrying out environmental awareness campaigns was concerned. The learner thought their shows were boring. His score is 1. Learners 14, 15 and 16 got a mark of 3 and they were of the view that EMA's activities were below the expected standards as they failed to get their messages clearly. I do not know much about EMA because I have never attended their events. I think I missed them. (Student 17)

The level of littering observed means that EMA still have a long way to go in as far as avoidance of such practice stops. A few proved to be responsible through picking litter and placing it in bins.

4.2.5 "What strategies can be proposed to improve the effectiveness of EMA's environmental awareness campaigns in selected schools?"

"Funding will be sourced so as to make more visits to school as well as avail more environment awareness material to learners and teachers"(EMA official 2)

"Captivating gadgets like televisions, projectors and augmented reality (AR) googles can be used to make learners more involved such that they may readily grasp environment awareness concepts" (Teacher 1)

"Come with prizes next time. I will be more attentive so that I get what you will be telling us and answer all the questions that you will ask correctly" (Student 1)

Learners 16 and 17 when interviewed were of the view that EMA has done little to ensure that the people of Odzi area in Mutare district  improve their knowledge of

environmental conservation. They gave examples of how the area is littered and expressed concerns with how ZINWA water has gotten them sick. They suggested that EMA closely monitor ZINWA activities especially ensuring that rightful chemicals are used to treat water in their right quantities. They also suggested that bins and incinerators be placed at strategic points. These were given a score of 1. Learners 12, 13, 14 and 15 thought the agency could have done more in

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the area of land degradation and contamination of water bodies. They suggested that EMA should closely monitor mining companies and punish those found wanting heavily. Heavy fines will deter them from those anti environment activities. These were given a score of 2. Learners 5, 6, 7, 8, 9, 10 and 11 thought the agency has carried out its activities satisfactorily but had a long way to go in as far as making their campaigns more enticing was concerned. They suggested that the agency can make use of big screens that show environment awareness videos, game machines, prizes for quiz winners and use of well known artists to push their campaign messages. These scored a mark of 3 for EMA.

The final average after considering the four themes that were looked at is $(3+3+4+4) \div 4 = 3.5$ which gives us 4.

4.2.6 Data Presentation Using Observation

Demographic Information

- Total number of schools visited: 2
- Total number of students interviewed: 29
- Total number of teachers interviewed: 3
- Total number of EMA officials  interviewed: 5

Awareness of Environmental Issues

- Percentage of students who reported being aware of environmental issues: 80% - Percentage of teachers who reported being aware of environmental issues: 100%
- Top environmental issues identified by students and teachers:
 - Pollution (60%)
 - Climate change (40%)

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- Deforestation (30%)

Impact of EMA in Enhancing Environmental Awareness

- Percentage of schools that reported receiving support from EMA: 40
- Types of support received from EMA:
 - Training for teachers (20%)
 - Educational materials (20%)
 - Funding for environmental projects (10%)
- Percentage of students who reported an increase in environmental awareness after EMA's intervention: 45
- Percentage of teachers who reported an increase in environmental awareness after EMA's intervention: 50



Challenges Faced by Schools in Implementing Environmental Awareness Campaigns

- Lack of resources (60%)
- Limited support from school administration (50%)
- Limited expertise among teachers (40%)
- Limited community involvement (500%)

Recommendations

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- EMA should increase its support for schools in terms of training, educational materials, and funding.
- Schools should prioritize environmental education and involve the community in environmental awareness campaigns.
- Teachers should receive regular training and support to enhance their expertise in environmental education.

Although EMA is making strides in as far as environment awareness is concerned, the general observation is that the agency still have a lot of work to do for people to start practicing sustainable environment activities. Land, water and air pollution is still evident in schools and the immediate environment causing unsightly scenes. This poses a health time bomb given that no formal waste collection is taking  place.

4.3 Justification for using both interviews and observation

Using both interviews and observations in research provides a robust and comprehensive approach to data collection, offering several benefits including triangulation of data since Interviews and observations provide different types of data, allowing researchers to validate findings. Interviews provided data that heavily pointed towards efficiency in EMA activities but that view was diluted by the findings of the observation method which provided information to the contrary. By combining interviews and observations, researchers can gain a more complete understanding of the research phenomenon.: Interviews provide rich, qualitative data, offering in-depth insights into participants' thoughts, feelings, and experiences whereas observations provide a broader understanding of the research context, including behaviors, interactions, and environmental factors. Observations can help reduce social desirability bias, as participants may be more likely to report desired behaviors in interviews. By using both interviews and observations, researchers can increase the validity of their findings. Interviews and observations can be adapted to suit different research contexts, such as exploring sensitive topics or observing behaviors in naturalistic settings. Using both interviews and observations allows researchers to respond to emerging themes and adjust their data collection approach accordingly.

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Using multiple data collection methods can enhance the credibility of research findings. By triangulating data from interviews and observations, researchers can increase the reliability of their findings. Combining interviews and observations enables researchers to gather a more comprehensive and nuanced understanding of the research phenomenon, ultimately leading to more robust and credible findings.

4.4 Summary

This chapter is on data presentation and analysis and is under the following headings; introduction, data presentation, interview responses, themes emerged, data analysis, findings, discussion and this conclusion. The next and final chapter is chapter 5 and is about summary, conclusion and recommendations.

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter is written under the following headings; summary, conclusions, recommendations, suggestions for future research and conclusion.

5.2 Summary

The study looked at current level of environmental awareness among students and teachers in selected schools in Mutare district as well as how EMA promotes environmental awareness campaigns in schools. It also touched on the impact of those campaigns on students' and teachers' attitudes towards environmental conservation. Challenges that EMA face as well as strategies to circumvent them were also looked at.

5.3 CONCLUSION

The study found that the current level of understanding of learners and teachers in Mutare district is high reaching around 80%. EMA carries out a number of activities that include shows and competitions in schools. The agency is impacting learners' and teachers' attitudes towards sustainable environment ways strongly. These findings were strongly hinged on interviews that were conducted. Observations made revealed a different picture altogether. The knowledge that learners have is not being put to practice since most of them were in the habit of littering. Zimbabwe's dependence on natural resources has led to unsustainable utilization, evident in the prevalence of gold panners in Odzi area in Mutare district as well as improper disposal off energy drinks empty containers like cans and plastics as well as used pampers and condoms disposal. What is even alarming is that some of the learners are involved in mining activities. This is disturbing  their learning greatly as they come to

school too tired to learn and sometimes they do not come to school at all. The media's limited attention to environmental issues has exacerbated the problem. If the ills are brought to light with the people behind who are the mine or claim owners being named and shamed, they will definitely come to an end. The EMA's campaigns, while well-intended, have been ineffective in addressing environmental challenges, particularly in rural areas. The use of music and edutainment in awareness campaigns has been more effective than serious talk by EMA officers addressing learners on a variety of environmental awareness information, they will learn a lot about the environment. The young minds get carried away by the hit songs that are played at campaigns so as to capture their

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attention and they end up taking the songs as the theme of the campaign and not the information on sustainable environment.

5.4 RECOMMENDATIONS

Based on the study's findings, the following recommendations were made: EMA should identify awareness barriers and prioritize research and development of new communication platforms. The agency should partner with the media to ensure sound representation of awareness campaigns. It should address all environmental issues, not just waste management. Company cars should be allocated to district-level offices to improve rural outreach. The government should reduce Environmental Impact Assessment fees to discourage illegal mining. The government should also provide bins, build incinerators at strategic points and ensure that garbage collection is done timeously to reduce pollution.

5.5 SUGGESTIONS FOR FUTURE STUDIES

Future studies could explore the reasons behind EMA's focus on waste management and the effectiveness of alternative approaches.

This chapter was written under the following headings; introduction, summary, conclusion, recommendations, suggestions for future research and summary.

REFERENCES:

Almazroui, M. (2012). *Dynamical downscaling of rainfall temperature over the Arabian Peninsula* using RegCM4. *Climate Research*, 52, 49-64. doi:10.33394/climate.52.49

Assessing the Impact of Environmental Education on Students' Environmental Awareness
A study that investigates the effectiveness of environmental education programs

Bacigalupi, P. (2015). *The water knife*. Alfred A. Knopf.

Berners, M. (2010). *How bad are bananas: The carbon footprint of everything*.
HarperCollins.

Chimhowu, A., Manjengwa, J., & Feresu, S. (2010). *Moving forward in Zimbabwe: Reducing poverty and promoting growth*. Institute of Environmental Studies,
University of Zimbabwe

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage publications.

Dean, M. (2010). *Research methods and designs*. Blackwell Publications.

Environmental Education: A Practical Guide: A book that provides guidance on implementing environmental education programs.

Environmental Education Research, (2003). 3(2), 50-2.

Environmental Protection Agency (EPA): A website that provides information on environmental education and awareness.

Evaluating the Role of EMA in Enhancing Environmental Awareness in Schools: A study that examines the impact of EMA's initiatives on environmental awareness



in schools

Gates, B. (2021). *How to avoid a climate disaster*.

Ghosh, A. (2016). *The great derangement: Climate change and the unthinkable*.

University of Chicago Press.

Gilio-Whitaker, D. (2019). *As long as grass grows: The indigenous fight for environmental justice, from colonization to Standing Rock*. Beacon Press.

Guba, E. G., & Lincoln, Y. S. (1994). *Competing paradigms in qualitative research*. In N. K.

Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Sage Publications.

Hawken, P. (2017). *Drawdown: The most comprehensive plan ever proposed to reverse global warming*. Penguin Books.

Journal of Environmental Management: A journal that publishes research on environmental management and sustainability.

Kolbert, E. (2014). *The sixth extinction: An unnatural history*. Henry Holt and Company.

Kuhn, T. S. (1970). *The structure of scientific revolutions* (2nd ed.). University of Chicago Press.

Kumar, R. (2011). *Research methodology: A step-by-step guide for beginners* (2nd ed.). Sage Publications.

Kyle, N. (2014). *This changes everything: Capitalism vs. the climate*. Simon & Schuster.

Leedy, P. D., & Ormrod, J. E. (2015). *Practical research: Planning and design* (10th ed.).



Marshall, G. (2014). *Don't even think about it: Why our brains are wired to ignore climate change*. Bloomsbury.

McKenzie, F. (2014). *Windfall: The booming business of global warming*. Penguin Books.

Meynen, N. (2020). *Frontlines: Stories of global environmental justice*. Greenbelt Press.

Miller, T. (2017). *Storming the wall: Climate change, migration, and homeland security*.

Lights Publishers.City

Ministry of Education and Culture Annual Report (2020): A report that provides information on educational initiatives and programs.

Neuman, W. L. (2011). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Allyn & Bacon.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Sage publications

Paul, W. (Ed.). (n.d.). *Language, image, media*. Basil Blackwell.

Pettitor, A. (2019). *The case for the green new deal*. Verso Books.

Powers, R. (2018). *The overstory: A novel*. W.W. Norton & Company.

Rich, N. (2019). *Losing earth: A recent history*. MCD.

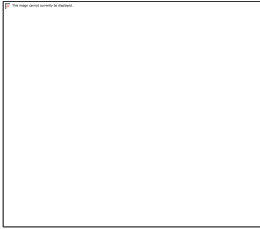
Thunberg, G. (2019). *No one is too small to make a difference*. Penguin Books.

United Nations Environment Programme (UNEP): A website that provides information on environmental education and awareness.

Wallace-Wells, D. (2019). *The uninhabitable earth: A story of the future*. Dwyer.

APPENDICES

APPENDIX A - INTERVIEW GUIDE FOR TEACHERS



BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE EDUCATION AND TECHNOLOGY

DEPARTMENT OF MATHEMATICS AND SCIENCE

INTERVIEW FOR TEACHERS

Greetings colleagues. My name is Sithole Mashanda, student number B225866A. I am currently studying for my BScEdCh degree in Chemistry at Bindura University of Science. My research is an investigation into the impact of EMA in enhancing environmental awareness campaigns in selected schools in Mutare district of Manicaland province. For the purpose of this research I will be asking you interview questions and I want you to be as open as you can and be honest when answering the questions. You may choose not to respond to any questions that you find to be offensive to you or to stop the interview completely at any stage

I promise sincerely that the information that I am going to collect during

2. What communication awareness campaign discourses does EMA create?
3. Which images, signs and symbols does EMA use in environmental campaigns?
4. What are EMA's objectives and motives in each environmental awareness campaigns?

NB: Each theme will score 0 to 5 marks depending on the degree of the response being pro EMA or not. The researcher uses his own discretion in the awarding of marks using themes that will have

come out of the research questions. An overall mark will then be calculated and that is the one that will be used to give an assessment of EMA environment awareness campaigns.

Two themes have been generated from the interviews conducted with 3 grade 6 teachers.

Theme 1 Increased awareness of environmental issues

Theme 2 Improved knowledge of environmental conservation

Thank you very much colleagues for your participation in this activity. I look forward to your continued support in the future

APPENDIX B - INTERVIEW GUIDE FOR LEARNERS



BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE EDUCATION AND TECHNOLOGY

DEPARTMENT OF MATHEMATICS AND SCIENCE

INTERVIEW FOR LEARNERS

Greetings pupils my name is Sithole Mashanda, student number B225866A. I am currently studying for my BScEdCh degree in Chemistry at Bindura University of Science. My research is an assessment of the impact of EMA in enhancing environmental awareness campaigns in selected schools in Mutare district of Manicaland province. For the purpose of this research I will be asking you interview questions and I want you to be as open as you can and be honest when answering the questions. You may choose not to respond to any questions that you find to be offensive to you or to stop the interview completely at any stage

I promise sincerely that the information that I am going to collect during the course of this interview will be kept safe and secret. I would not use your name or any other identifying information and everything that you would say will only be entirely used for the research purpose.

Interview guide

1. What environmental awareness representations manifest in EMA communication campaigns?
2. What communication awareness campaign discourses does EMA create?
3. Which images, signs and symbols does EMA use in environmental campaigns?

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4. What are EMA's objectives and motives in each environmental awareness campaigns?

NB: Each theme will score 0 to 5 marks depending on the degree of the response being pro EMA or not. The researcher uses his own discretion in the awarding of marks using themes that will have come out of the research questions. An overall mark will then be calculated and that is the one that will be used to give an assesment of EMA environment awareness campaigns.

Thank you very much learners for your participation in this activity. I look forward to your

continued support in the future

APPENDIX C - CONSENT LETTER FROM THE DISTRICT

Do not type or write in this area

Do not type or write in this area

APPENDIX D - SECONDARY SCHOOL CONSENT LETTER

Bindura University
of Science Education

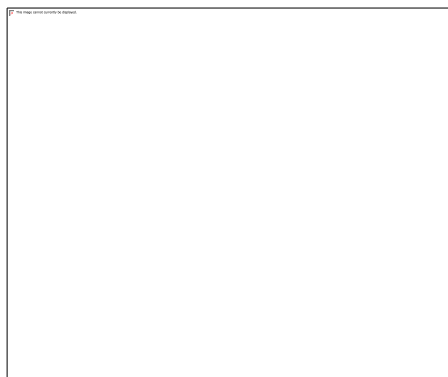


APPENDIX E - PRIMARY SCHOOL CONSENT LETTER ABOVE



APPENDIX F: OBSERVATION GUIDE

BINDURA UNIVERSITY OF SCIENCE EDUCATION



FACULTY OF SCIENCE EDUCATION

DEPARTMENT OF SCIENCE AND MATHEMATICS

SERIAL	OBSERVATION POINT	COMMENTS
01	Teaching-learning resources/materials for Science teaching and learning in line with Education 5.0	Only hands-on activities like paper picking, sweeping and some land filling of erosion points using bricks was observed being done by the target group learners. Innovative methods like gamification and simulation were not used due to lack of tools like game consoles.
02	Nature and suitability of teaching-learning to cater for all learners in Science lessons	Although text books are scarce, a few that were there were distributed fairly. Everyone had access to a book although sharing. The same applied to furniture. Everyone had somewhere to sit and write although the furniture was shared. There was chalkboard work and charts to help learners to understand the work that was covered.

03	Comment on the nature of interaction in Science lessons based on Education 5.0;	A group work exercise was given to learners so as to induce some learner-learner interaction. To his was effective since their feedback was fascinating.
	Learner-learner interaction Teacher-learner interaction	Class discussion was used to conclude the lessons. These stages insured a lot of teacher-learner interaction. The teacher uses this stage to reinforce concepts delivered and to clear out misconceptions noted among learners.
04	Evidence of catering for learners in Science lessons	There were teaching aids in form of charts, chalkboard, pictures, pamphlets and actual objects that were used to demonstrate points and ensure mastery of the concepts that were covered. All the learners were given equal chances to air out their views during the lesson. This ensured that every learner was catered for during interactions.
5	Use of resources, technology and space for learning skills in Science Education in line with Education 5.0	It was observed that no electronic devices were like television, projector, laptops and game consoles were used during the lesson observed. It's easier to achieve education 5.0 targets especially if the tools used to teach them are availed and made accessible to learners.
05	Other critical observable aspects in relation to teaching and learning of Science Education based on Education 5.0	There is need for further training to effectively integrate education 5.0 principles into their teaching practices. Such professional development moves will ensure that integration of education 5.0 principles into their teaching practices becomes effective.

