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## The Extent to Which Upper Primary School English Curriculum Has Addressed Environmental Pollution

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### Abstract

Environmental pollution is now a recurrent theme and a topical issue in the corridors of power. Awareness of environmental pollution was raised significantly at the well documented conference on Environment and Development in Rio de Janeiro in 1992 under the auspices of the United Nations. This event was a game changer and signalled to the international community that action is needed to tackle the problem of environmental pollution at all levels. This study examined the extent to which the teaching and learning of English at upper primary school level has addressed the problem of pollution encountered in schools in the Jwaneng Primary Schools in Botswana. The study was undergirded by the behaviorists and social cognitive theory. The methodology for this study utilized the qualitative approach. An observation tool and focus group discussions were used as instruments for data collection. Data were collected among teachers of English and pupils at Upper Primary school levels in Jwaneng Township utilizing purposive sampling. Data obtained gave a consistent picture that participants were aware of the various forms of pollution such as water contamination, air pollution, and noise pollution and littering. Awareness about pollution has been promoted by debates on climate change which is now a global issue often tackled at summits where super powers like United States of America and China are expected to show the necessary leadership. The study revealed that inhalation of air polluted of polluted air cause many health hazards due to the negative effects on the organs of the body, including primarily the Respiratory system, circulatory system, heart, nervous system and brain. It was also found that there was lack of adequate materials and the textbooks in use did not reflect any significant content on Environmental Education (EE). It is therefore recommended that the Department of Curriculum Development consider to expand the scope of infusion of Environmental Education in English teaching and learning resources/materials.

**Keywords:** *Environmental Education, Pollution, Primary school curriculum, Environmental sustainability, Infusion and Integration*

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### 1. Introduction

The concept of pollution is based on the introduction of contaminants into the environment that cause harm or discomfort to humans and other living organisms, or that damage the environment. Pollution is defined under the Environmental Protection Act of 1986, Western Australia (WA) as an alteration of the environment to its detriment or degradation,

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which involves an emission. An emission is defined as a discharge of waste, or an emission of noise, odor or electromagnetic radiation. The issue of pollution found its way on the environment due to human activities which lack education and proper management of the environment for future use. Matthewman (2010) states that, concern about the environment is emerging within English as an important new field of literacy theory and practice. English subject was also viewed as an exciting way of deepening children's understanding of the environment as important to all subjects. However, most accounts of the history of English stress the origins of the subject as springing from deep concerns about the cultural development of society rather than arising from concerns about nature and the environment.

Pollution in the environment is the most studied issue in Botswana's urban areas (Atlhopheng *et al.*, 2003). However, most studies have not addressed specifically how the English curriculum in upper primary school classes in Botswana has addressed environmental pollution. Processing and manufacturing industries affect the environment by causing pollution when raw materials are processed and made into products. Some of the waste contains poisonous chemicals that pollute the air, land and water if it is not disposed of properly. Pollution is one of the major causes of global warming. Due to climate change caused by global warming some health problems occur in human beings and animals. Problems of desertification and many other environmental issues are associated with pollution. This has resulted from many factors that include emission of dangerous gases such as sulphur dioxide from mining and manufacturing industries. Education and proper management of the environment are perspectives that can help curb the situation. The result of pollution is observed through the environment and the behavior/attitude of people towards the environment.

The study investigated the impact made by upper primary school English curriculum in addressing pollution through the infusion of EE. The study explored the teachers and the students perceptions regarding English curriculum and the impact it made in addressing pollution as an environmental issue since the inception of the School Environmental Policy (SEP) in 2003 which was to be used as an infusion resource package across the curriculum. SEP was launched at Maharaja Conference center in Gaborone, ten years after Agenda 21 Earth Summit in Rio De Jenario. The aim of the launch was to sensitize the nation that issues of the environment including pollution is everybody's responsibility. This study sought to find out how schools address pollution as an environmental issue in Botswana. In addition, the study searched for identification measures that can curb the situation such as the 3R's (Reduce, Reuse, Recycle). The study's main objective was to investigate the extent of the coverage of pollution in the English curriculum at upper primary school level.

## 2. Understanding Environmental Pollution

Like indicated at introductory stage, pollution is anything that makes the earth dirty and unhealthy. That is to say, land, air, and water are all affected by pollution. Many of the things people use every day come in packages, like food, games, school supplies, and electronics. These packages end up in large underground dumps called landfills. Landfills make land unhealthy for animals and people. It further stresses that environmental pollution is the introduction of contaminants into the natural environment that cause adverse change. This occurs when only short-term economic gains are made at the cost of the long-term ecological benefits for humanity. In addition, pollution according to the UN definition refers to "The introduction by man, directly, or indirectly, of substances or energy to the natural environment resulting in deleterious effects such as: hazards to human health, hindrance to activities, impairment of the quality of seawater, land or atmosphere for various uses and reduction of amenities.

In his study, Foley (2010) discovered that throughout history, the population has extended physically across our nation due to the thought that "inexhaustible riches" were available and land was abundant on which to pollute and not feel the repercussions. One of the main events that contributed to the heightened pollution in Europe and the United States of America was the Industrial Revolution which began in the 1780s and continued for the next one hundred years in the United States. Furthermore, Kobasa (2009) supported that although the Industrial Revolution made goods cheaper with mass production, "factories, the energy industry, and transportation networks gave off huge amounts of pollution". Since the population has "surged from about one billion in 1800 to nearly seven billion today," people are beginning to feel the effects of their previous misconceptions about the Earth's land and environment (Foley, 2010).

Several causes of pollution have been investigated, but according to Commoner *et al.* (1971), increasing population, increasing consumption, and the kind of technology used are the main factors activating pollution. Pollution has also become a political issue, since candidates on all levels are competing to see who can allegedly do the most to save the environment (Newsweek, 1970). Hill (2010) mentioned that the Kyoto Protocol and Montreal Protocols have gone a long way to get nations to start doing something about global pollution. Although issues such as climate change, depletion of the ozone layer which get media attention, there is also serious pollution which takes place in local communities. The Kyoto and Montreal protocols were more on enhancement of energy efficiency in relevant sectors of the national

economy such as transport and electricity generation. In addition, fossil fuels used for powering vehicles were identified as the source of emission of greenhouse gases which cause ozone depletion. Hence the depletion of the ozone layer has been linked to global warming and climate change (United Nations, 1998).

Worth noting is that, compared to developed countries, pollution in Africa is lower because of lower levels of industrialization. Nevertheless, according to Omole and Ndambuki (2014) Africa is under threat of increased air, and water pollution due to expanding population and the pressures of development. As the world population grows there is an analogous growth in the need for clean water, sanitation, energy and infrastructure. These objectives of development use environmental capital which happens at the expense of the environment. In Southern Africa a lot of pollution is due to mining. Countries like Angola, DRC, Zambia, Zimbabwe, Botswana, Namibia and South Africa rely heavily on mining for economic development. It follows that mining produces a lot of solid waste which is usually dumped and become an eyesore to the environment (Sima *et al.*, 2008). Mining activities are also known for polluting underground water though these varies with the type of minerals and the type of mining.

An analysis of pollution in South Africa shows that around the Gauteng area, there is a gold mining which has left dumps of solid waste around the city of Johannesburg. A case study by Oelofse *et al.* (2011) reported that as at 1997, South Africa produced “an estimated 468 million tons of mineral waste per annum. Gold mining waste was estimated to account for 221 million tons or 47 % of all mineral waste produced in South Africa, making it the largest, single source of waste and pollution (DWAF, 2001)” cited by Oelofse *et al.* (2011). Apart from solid waste pollution, mining also contaminates water. Another source of pollution in South Africa is industrial waste especially that South Africa is the most industrialized country in Africa.

Argarwal (2005), stated that air pollution is the most common form of pollution caused by chemical processes involved in the mining industry where there is the emission of sulphur dioxide which can be converted to acid rain. A research study by Darkoh and Asare (2001) showed that the Nickel mine has polluted the environment through air pollution and this has compromised the residents of Selibe- Phikwe. In this mining town the air pollution is caused by metallurgical processes and smelting of ore which produces gases like Nitrogen Oxides and Sulphur dioxide which are emitted into the atmosphere. Sulphur dioxide is one of the air pollutants which cause health problems such as:

- Irritation of the eyes, nose, and throat
- Wheezing, coughing, chest tightness, and breathing difficulties
- Worsening of existing lung and heart problems, such as asthma leading to increased risk of heart attack.

Vulnerable groups to air pollution include children, older adults, people who are active outdoors and even wild animals. Toxic pollutants in the air, or deposited on soils or surface waters, can impact wildlife in a number of ways. Like humans, animals can experience health problems if they are exposed to sufficient concentrations of air toxics over time. Studies show that air toxics are contributing to birth defects, reproductive failure, and disease in animals (Patrick and Murray, 2017). The main sources of air pollution in Southern Africa include industry (thermal power stations, smelters, cement factories, chemical factories), forest /savannah fires, biomass burning (use of firewood and charcoal), waste burning and transportation emissions. Air pollution is linked to a number of human health and environmental impacts including respiratory diseases. Therefore it is hoped that the findings of this investigation provided insights on how pollution could be addressed through school curricular.

### 3. Environmental Education in Botswana

Botswana has a strong policy support for the integration and infusion of environmental issues into school curriculum (Oats, 2016). A notable feature of Botswana school curriculum for EE is its integrated and multi-disciplinary approach to teaching and learning in which EE is incorporated into all subjects across the school curriculum at all levels. The fruits of this holistic approach to EE in dealing with the multi-faceted and complex nature of environmental issues and concerns is however yet to be seen. Along with this condition is the challenge of teacher capacity building for EE since teachers play a crucial role in the implementation of any educational initiative. The attitudes and skills of teachers are central in determining the mix of different types of knowledge, skills and affective objectives in EE programs and the political and social interests that they serve (Fein, 1991).

According to Ramsey and Hungerford (1989), in the infusion approach, content and skills are integrated into existing courses so as to focus on that content without losing the integrity of the courses themselves. Furthermore, this approach, with the teacher acting as a facilitator and advisor, is probably more effective at fostering responsible citizenship behavior than the issue itself. Infusion of EE into English curriculum informs us about the education policy

of Botswana which recognizes the important status of English as a global language (Ramsey and Hungerford, 1989). Therefore, it is used as a medium of instruction in Botswana's public and private schools.

In addition, the Revised National Policy on Education (RNPE, 1994) outlined that; education must offer individual students in schools a life-long opportunity to develop themselves and to make their country competitive internationally. This indicates the importance of education goal should be elevated especially through the globally recognized medium of instruction, because achieving it would provide the resources to reduce pollution, to improve health, and to provide for inclusive growth that lessens inequality within and between countries. According to Kluge (1971), one of the things the world needs is EE for young children. Just as a child is helped to understand his role in the classroom environment, he must also be encouraged to look beyond his immediate surroundings to the forces and conditions affecting these surroundings. Some educators have responded by prescribing general objectives for preschool and elementary children, proposing that emphasis should only be given to increase the child's perceptual level through the appreciation of space, form, and nature (U.S. Department of Health, Education and Welfare, 1971).

Numerous studies indicate that teachers and students in Botswana and many parts of the world are addressing outcomes relevant to environmental education and that students in many schools are actively involved in local environmental projects (Scoullios, 1999). Experiences such as planting trees, cleaning creeks, collecting information and taking positive action in the local environment are often incorporated into these programs and students report having learned new information, skills, attitudes and approaches to environmental problems (Ballantyne, 1998).

A challenge observed in the case of Botswana school curriculum at all levels is that environmental education has long struggled for legitimacy alongside more traditional disciplines like mathematics and language arts. Simply put, it is not a mandated part of the curriculum, and therefore, the schools have not taken on that central role in this process (Sobel, 2004). The absence of environmental education in the curriculum has left environmental stewardship in the hands of individual classroom teachers (Russo, 2008). By doing so, the assumption is made that teachers are sensitive to environmental issues and are willing and able to incorporate it into their daily agendas. Furthermore, research suggests that most educators are not prepared to "present environmental topics" to students in a manner that reflects the complexity of the issues involved" (Smith, 2005). This condition calls for deeper strategies of teaching not only pollution but environmental education as a whole. Research shows that merely teaching children about environmental issues will not help them to develop a deep environmental sensitivity that may lead to a proactive lifestyle (Mcewen and Metzger, 1999).

#### **4. Theoretical Framework**

This study is supported by the Behaviorism and Social cognitive theories which offers an attitude change perspective and enlightening how situations faced can be undertaken collectively. These theories are mostly associated with qualitative research. This is used to obtain an understanding of the world from an individual perspective. According to Eggen and Kauchak (2007), behaviorism is a theory that explains learning in terms of observable behaviors based on the influence of environmental stimuli. It is further explained by Schunk (2004); Skinner (1953) in Eggen and Kauchak (2007) that, observable behavior occurs as a result of experience. This shows that for one to change a certain behavior he/she must have first-hand experience of things around him so that when he explains concepts he would have gone through different processes of such to be sure of what is going on. Therefore having experienced the effects of environmental pollution, individuals should be convinced to change their behaviors to conserve the environment.

The social cognitive theory on the other hand focuses on changes in behavior that result from observing others (Eggen and Kauchak, 2007). Thus, what one knows is always negotiated within cultures, social settings and relationship with other people. In this manner, behaviors that are easily copied can lead to attitude change towards the environment. In this case older people and educators should lead by example so that young people would copy the behavior in managing the environment. The two theories helped inform the findings of the study by generating strategies that will influence schools and other stakeholders in policy formulation on environmental conservation issues. Furthermore, the theories influence behavior change so that awareness is raised within schools and the entire society. The theories also inform the methodological orientation to pave way for the adoption of relevant data collection and analysis techniques. They also have the assumption that reality can be seen and measured, an assumption that is used to govern the world. Hence in this study reality will be measured by the impact of observable behaviors which will be studied during observations.

#### **5. Research Design**

This study followed the qualitative phenomenological approach in its pursuance to explore the experiences and awareness of participants regarding pollution and how the challenge could be address through school curricular. The study

targeted teachers and pupils at primary schools in Jwaneng Township, Botswana. Ary, Jacobs and Razavieli (2002) posit that participant selection is an important and integral element in any research study. Patton (1990) states that purposive participant selection is a non-random method of selection where the researcher selects information-rich cases for in-depth study. This means that information-rich participants are those from which one can learn a great deal about issues of central importance to the purpose of the study. Participants in this study were deemed to be rich informants by virtue of the experiences first are inhabitants of the township, secondly as experiences teachers of English and for learners additionally been at upper primary school level. As a result, this study used purposive selection to select three (3) primary schools which are the only primary schools in the township. Purposive selection was further used to identify twelve student participants from the selected schools for focus group interviews and 2 teachers from each school. The participants were selected with the help of their school authorities.

As this is a qualitative analysis of narrative data, methods to analyse data had to be different from the more traditional or quantitative methods of research (Author, 2017), essentially focusing on the meaning of the explored experiences, behaviors and narrative. A little bit on analysis—coding, patterns, and themes. As such, interviews and observation were used as methods to collect data. Semi-structured interviews were conducted on all participants. These were one-on-one interviews which allowed probing to ensure the full coverage of the questions which were planned (Bacon and Allyn, 2006). Observation was conducted to provide an added angle to findings.

Validity and reliability are critical aspects in any given research. Wallen and Fraenkel (2001) defined the two terms respectively as the extent to which an instrument gives the information wanted, and the consistency of information obtained. The interview guide was given to the research expects to review and advise. To determine reliability, a mock interview was conducted, so that the researchers can establish practicality of the interview items. This is where the researchers were checking the understanding and ability to answer the questions, highlighting areas of confusion and scrutinizing any unforeseen errors, as well as estimating the average time the interview sessions would take to complete. To analyze collected data, thematic analysis was employed where data was organized according to the themes of the study. Maguire and Delahunt (2017) describe thematic analysis as the process of identifying patterns or themes within qualitative data and these themes would later inform the discussion of the study.

## 6. Findings

In connection with research question 1, which sought to find out about the level of awareness of environmental pollution, it was found that there is a high level of awareness which varies between the different types of pollution. Awareness about air pollution was found to be 69% and for plastic pollution was found to be 94.1%. The introduction of plastics bags was revolution in the packaging industry, but which soon became a curse to the environment. The major impact of plastic bags on the environment is that it takes many years to for them to decompose. In addition, toxic substances are released into the soil when plastic bags perish under sunlight and, if plastic bags are burned, they release a toxic substance into the air causing ambient air pollution (Simons, 2005). On the issue of plastic pollution the Government introduced the plastic levy with the intention of controlling plastic pollution. Surprisingly, it is reported by Marumolao (2017) that the Government has been unable to collect the plastic levy. Nevertheless, the level of awareness for both air and plastic pollution is high and this may be due to litter picking campaigns which have been done through schools and the Kgotla where community leaders have encouraged the public to keep and appreciate a clean environment. Environmental Education has also been spread through radio, television and the print media. Anti-pollution campaigns have been necessary because Botswana has been found to suffer high levels of air pollution due to anthropogenic (human-made) activities such as construction dust, vehicular emissions and mining (Winston, 2017). In the Jwaneng area where this study was carried out, there is air pollution due to construction, vehicular emissions and mining activities. The high awareness of plastic pollution is due to the rapid economic development of the country which has brought about urbanization, establishment of chain stores and supermarkets which sell plastic shopping bags to customers. Economic development has led to industrialization and some of the industries are plastic factories. Below are findings from observational data and focus group interviews.

## 7. Observational Data

The aim of collecting observational data was to answer the research questions on (i) what methods are used to infuse environmental education in the English curriculum of upper primary? (ii) What materials are in place or used to sensitize students on environmental pollution? and (iii) what is the impact of environmental education on the degree of pollution in Jwaneng? An observation schedule was used to collect data for qualitative analysis. Observation was done through seeing, listening to what was taking place in the school environment and review of important documents such as

textbooks, syllabus, for standard 5, 6 and 7. The observation schedule revealed that the materials used for infusing environmental education are library materials, but other schools had no materials even posters (Table 1).

English Syllabus	EP Objects		
	Standard 5	Standard 6	Standard 7
Listening	8 out of a total of 24	5 out of a total of 16	4 out of a total of 18
Speaking	8 out of a total of 22	5 out of a total of 18	6 out of a total of 20
Reading	7 out of 23	3 out of a total of 19	10 out of a total of 25
Writing	5 out of 19	6 out of a total of 24	7 out of a total of 23
Grammar/Syntax	6 out of 21	4 out of a total of 16	5 out of a total of 20

Strategies and methods used for EE, were observed to be exhibitions by the Council on how to recycle, reuse materials which pollute the environment. In the schools, strategies used to integrate Environmental Education were the formation of Environmental clubs and the habit of picking litter using a rota so that everyone participates and takes responsibility for a clean environment. Plastic bags can be used a number of times for grocery shopping and this can reduce pollution by plastics. It was observed that students of Dithotang Primary School (false name) were reluctant to use dust bins whereas students of K-banyana Primary School were positive about keeping classrooms and surroundings in a state of cleanliness (Table 2).

English Syllabus	EP Objects		
	Standard 5	Standard 6	Standard 7
Conversations	2/26	0 out of a total of 10	0 out of a total of 1
Instructions	0 out of a total of 30	0 out of a total of 13	0 out of a total of 9
Letter writing	1 out of 22	1 out of a total of 3	1 out of a total of 8
Compositions	3 out of 16	6 out of a total of 24	7 out of a total of 23
Reports	6 out of 21	2 out of a total of 9	1 out of a total of 2
Stories/Drama	0/14	1/5	2/9
Poetry	2/16	1/5	0/5

A focus group interview was used to collect data to answer research questions on levels of awareness of environmental pollution in Jwaneng and teaching methods and strategies used to impart environmental education and to determine the content of environmental education in the English curriculum. The interview consisted of semi-structured questions with the aim of getting rich answers to the questions on environmental pollution. The interviews were conducted at the 3 schools involving a total of 15 interviewees.

**Question 1** sought answers on awareness about pollution one interviewee responded by saying, “There is serious pollution”. Another interviewee said, “there is, air, noise, tins, plastics, and oils”. The interviewees mentioned, land forms of pollution such as plastic, tins and dumping of waste, were frequently stated in the interview.

**Question 2** sought answers to students’ environmental education Interviewee 1 said, “Students get information on environmental education at assemblies”. Another interviewee said, “The objectives of the syllabus, some of them refer to environmental education”. Interviewee 3 said, “Students pick litter”. “Science and Agriculture teachers teach about pollution”.

**Question 3** sought information on strategies to deal with pollution at school level. Some of the strategies mentioned were, “We have environmental education clubs”, “Join competitions on Environment Education”. Another interviewee said, “The Environmental Education Club won a prize”.

**Question 4** sought answers on how the curriculum infuses environmental education and some of the answers were, “Science subject has environmental education”, “Social Studies has environmental education”. Another interviewee stated, “English as a subject does not have much on environmental education”.

## 8. Discussion of Findings

With regard to the question on the level of awareness of environmental pollution in Jwaneng schools, it was found that the level of awareness of environmental pollution is high and there was greater awareness about pit latrines that they can pollute the water table and contaminate water. Awareness about air pollution was found to be 69% and for plastic pollution was found to be 94.1%. The introduction of plastics was some kind of revolution in the packaging industry, but which soon became a curse to the environment. On the issue of plastic pollution the Government introduced the plastic levy with the intention of controlling plastic pollution. Surprisingly, it is reported by Marumolao (2017) that the Government has been unable to collect the plastic levy. Nevertheless the level of awareness for both air and plastic pollution is high and this may be due to litter picking campaigns which have been done through schools, the kgotla where community leaders have encouraged the public to keep and appreciate a clean environment. Environmental Education has also been spread through radio, television and the print media. The anti-pollution campaigns have been necessary because Botswana has been found to suffer high levels of air pollution due to anthropogenic (human-made) activities such as construction dust, vehicular emissions and mining (Winston, 2017).

In the Jwaneng area where this study was carried out, there is air pollution due to construction, vehicular emissions and mining activities. The high awareness of plastic pollution is due to the rapid economic development of the country which has brought about urbanization, establishment of chain stores and supermarkets which sell plastic bags to customers. Economic development has led to industrialization and some of the industries are plastic factories.

On methods used to infuse environmental education in the English curriculum at upper primary school level, findings clearly indicated that the English curriculum does not have modules on pollution as a subject but that teachers are expected to infuse environmental education. It appears there is more infusion in subjects like Social Studies because according to BEC (2013) the curriculum goals are aimed at teaching students about “the importance of using natural, human and economic resources in sustainable ways and to evaluate the effect that the different economic sectors have on the physical, socioeconomic and cultural environments;” Since pollution is thoroughly dealt with in Social Studies, may be the reason why the English curriculum has little Environmental Education in terms of content as this would be unnecessary duplication”. Another reason why it has proved difficult to infuse EE in English lessons is because, English is a subject with well-established materials and books and methods which are not easy to modify to accommodate EE. A need to work towards changing the mind-set of English curriculum specialists and teachers to deliberately infuse and integrate EE was noted.

## 9. Conclusion

Data obtained through research in Jwaneng schools gave a consistent picture that participants on the sample were highly aware of the various forms of pollution such as water contamination, air pollution, and noise pollution and littering. Awareness of pollution has been promoted by debates on climate change which is now a global issue often tackled at summits where super powers like the United States of America and China are expected to show the necessary leadership. The emergence of green technology such as the use of solar power, biodiesel is expected according to opinion and thought leaders in this field to contribute to the reduction of air pollution. A decision on plastic bags was made in Botswana Parliament that the use of plastic bags will be banned. Bakang (2018) reported that, Minister Khama told a media briefing on February 27, 2018 those consultations with stakeholders, both within government and private sector, had been done on the issue of plastic pollution. It was also reported that, “The process has started and my ministry has embarked on informing Botswana and other stakeholders to prepare and get ready for the ban as well as putting in place alternatives for the plastic carriers/flat bags” the minister said according to Bakang (2018) and that as it were, the writing is on the wall. It was also reported by Kganyane (2017), that “Plastic bags in Botswana are of use to consumers but at a cost to the environment.

The widespread use of easy access, very cheap and low quality plastic bags have resulted in a negative visual externality for the used bags littering both urban and rural streets. Environmental degradation caused by littering of plastic bags has been and still is a problem in Botswana. This seriously affected some sectors which are the main

contributors to the national economy, being agriculture and tourism” (Kgamananyane, 2017). On the other hand the methods used by teachers to infuse EE into the English curriculum were limited to the use of posters and social clubs that promote environmental education. The learning materials such as books for English were thin on content about environmental pollution. It is therefore not surprising that EE has not had a positive impact on the people of Jwaneng because there is still a lot of littering with plastics, tins, rabble, and noise and air pollution in the Jwaneng area.

## 10. Recommendations

The findings of the study found that there was a lack of adequate learning material, and the textbooks did not reflect any significant infusion of EE. It is therefore recommended that the Department of Curriculum Development consider expanding the scope of infusion of EE in English teaching and learning resources/materials.

The school management needs to be resourced on the importance of EE by the Department of Primary Education. It is assumed that in any organization leadership plays a critical role for the successful implementation of programs. There is need to have EE fairs for schools in the sub-regions to increase sensitization and awareness about pollution. Whilst it was found that there is a high awareness of air, plastic and water contamination, this awareness should be sustained through activities such as campaigns, and poster competitions for students.

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