

AUTHOR:

Solomon Ailwei Mawela 
<https://orcid.org/0000-0002-7043-8716>

AFFILIATION:

Department of Curriculum and
Instructional Studies,
University of South Africa

CORRESPONDENCE TO:

mawelas@unisa.ac.za

DATES:

Published: 17 June 2020

HOW TO CITE THIS ARTICLE:

Mawela, A. S., 2020. Teacher's
views on support by environmental
non-governmental organizations
in selected Alexandra Township
primary schools.. KOERS — Bulletin
for Christian Scholarship, 85(1).
Available at: [https://doi.org/10.19108/
KOERS.85.1.2383](https://doi.org/10.19108/KOERS.85.1.2383)

COPYRIGHT:

© 2020. The Author(s).
Published under the Creative
Commons Attribution License.

Teachers' Views on Support by Environmental Non-Governmental Organisations in Selected Alexandra Township Primary Schools

ABSTRACT

This article explores teachers' views regarding the support by environmental non-governmental organizations in managing environmental education (EE) projects in primary schools. In this qualitative case study research, a purposive sampling approach was used to sample thirteen (n=13) teachers from thirteen primary schools. Data was collected by means of using semi-structured interviews and findings were analysed and discussed. The study was grounded in the total quality management theory and the interpretive paradigm, as it was concerned with the management of environmental education projects in primary schools. In order to examine how the environmental NGOs and, teachers' management of environmental education projects in schools, the researcher drew on the concept of opportunity to learn (OTL). Findings indicated that teachers viewed environment NGOs as valuable in sharing the knowledge, skills, and experience in managing EE projects. Lack of time and resources were identified as additional barriers towards managing environmental projects in primary schools. Teachers were not trained as environmental educators, and they viewed managing EE projects in schools as additional work. Therefore, despite the efforts made by environmental NGOs managing school EE projects, the sustainability of these projects after NGOs disengagement was a problem in most schools. The article concludes with suggestions based on the findings, outlining how environmental NGOs can impart knowledge and skills in managing EE projects towards awareness of and involvement in the fight against pollution and the desecration of natural resources.

Keywords: Environmental education, environmental non-governmental organizations, Primary School

1. Introduction

The involvement of South Africa in environmental conservation is observed in its commitment to participate in world organisations such as United Nations Conference on Environment and Development under Agenda 21 (UNCED, 1992); which speaks about the need to increase people's sensitivity to, and involvement in, finding solutions for environmental and ethical awareness, values and attitudes, skills and behaviour needed for sustainable development. Despite that, South Africa is a signatory to the United Nations Millennium Developmental Goals (MDG) on sustainable conservation of the environment (MDG, 2015) which promotes sustainable use of the environment. The constitution of the Republic of South Africa (1996) also stipulates the right of every citizen to the healthy and safe environment. In light of the above, this study intends to explore the role of environmental NGOs in South Africa in imparting knowledge and skills to teachers on how to manage EE projects in primary schools as a way of supporting MDG and UNCED on environmental conservation and sustainability.

Singh and Rahman (2012) indicated that, in many schools, environmental NGOs have over the years occupied the primary role in instilling awareness about environmental issues in schools. South Africa like many other countries such as Australia, valued the importance of environmental NGOs in schools. This is seen by the establishment of various Environmental NGOs such as the Environmental Education Association of Southern Africa (EEASA) in 1982 and the involvement of Department of Environmental Affairs and Tourism (DEA & T, 2001) in environmental education in schools. EEASA was established as an environmental NGO aiming to support schools with environmental education activities through visiting schools to developing teachers and learner's support materials and resource network (DEA & T, 2001). The commitment of government in environmental education was also reflected in the South African White paper on Education and Training (South Africa, 1995) which echoed that environmental education should be integrated into other subjects as an active learning approach in order to create environmentally literate and active citizens who will ensure the sustainable conservation of the environment for the present, and future generations.

Despite the unavailability of formal training of teachers in schools to integrate environmental education in curriculum subjects, the National Environmental Education Programme (NEEP) was launched to provide a coherent and coordinating framework through which various environmental organizations can work with schools (DEAT & T, 2001). The intention by the Department of Basic Education to integrate the environmental education into Curriculum and Assessment Policy Statement (CAPS) was to bring both teachers and learners into actions that can address environmental issues within and the surrounding schools (CAPS, 2012). Since the birth of the non-racial democratic dispensation in South Africa in 1994, South Africa has been faced with the great challenge of implementing a curriculum that can address the needs of all children equally. Outcome-Based Education (OBE), National Curriculum Statement (NCS), Revised National Curriculum Statement (RNCS) are some of the curricula that preceded the Curriculum and Assessment Policy Statement (CAPS) established in 2012, which aimed at the integration of EE themes into curriculum subjects and improving the teaching and learning methods in schools (DBE, 2012).

This case study discusses the support that environmental NGOs offer to teachers in primary schools to manage EE projects in schools. Monroe, Day and Grieser (2002) indicated that learners should not be taught "what to think" but "how to think", sharing skills to come up with solutions regarding environmental problems. Managing EE programmes in schools by NGOs implies engaging teachers and learners in acquiring knowledge and skills on how to handle resources, deal with challenges and working towards finding sustainable solutions regarding environmental issues. Mokhele and Jita (2008) indicated that teachers often lack a coherent and practical vision of how EE should be integrated into other subjects for the simple reason that, the majority of them have never been exposed to this form of teaching or been trained in such a teaching method.

The next section presents the contextualization of the study.

2. Contextualisation of the case study

This case study was conducted in Alexandra Township primary schools located in the northeast of Johannesburg, Gauteng Province in South Africa. This native township was established as a farm in 1912. It is a homogeneous native Township comprising different ethnic groups such as Venda, Zulu, Sotho, Tsonga, Xhosa, Ndebele, Coloured, Swati and Pedi. The township has a long history of poverty and overcrowding with critical environmental problems such as water, land and air pollution, deforestation, and extinction of fauna and flora (Morris, 2000). After 1994, a new government was established under the late President Nelson Mandela and the political demarcation emerged. Based on this change of political landscape, Alexandra as a Township experienced a huge influx of people from rural areas in South Africa looking for employment in the mining sector,

which created serious environmental challenges. Besides that, people moving from rural areas within South Africa, many foreign nationals grabbed the opportunity to find refuge in Alexandra Township. In the context of the study, the researcher lived in this vibrant native community. The researcher is a former teacher and primary school principal and has been leading a women-based environmental biodiversity project since 2002. The Environmental challenges in this community prompted the researcher to explore environmental issues because of the alarming challenges related to biodiversity, environmental degradations, high pollution rate, and extinction of indigenous fauna and flora and types of pollutions. Emanating from these environmental challenges, this case study explores teacher's views regarding the support by environmental NGOs in managing EE projects in primary schools.

3. Literature review

This section reviewed the relevant literature pertaining the support by environmental NGOs in managing EE projects in primary schools. The focus is on views of other scholars pertaining the integration of EE themes into CAPS subjects as part of giving learners opportunity to learn (OTL) about environmental issues, and also the role of environmental NGOs in managing EE projects in primary schools with special reference to South Africa, Australia, and Tanzania.

4. The role of environmental NGOs in managing EE projects in schools

In South Africa, both Department of Education, and Department of Environmental Affairs and Tourism (DEA & T) are cooperatively working together towards ensuring that schools are integrating EE into curriculum subjects. Despite that, there are several environmental NGOs that are participating towards enhancing the effective management of EE projects in schools, such as the Environmental Education Association of Southern Africa (EEASA), and the Wildlife and Environmental Society for South Africa (WESSA). These organizations aimed at improving the school curriculum through education for sustainable development and provide critical work skills training for teachers and learners. According to UNCED (1992) as stipulated in Agenda 21, "There is a need to increase people's sensitivity to, and involvement in, finding solutions for environmental and ethical awareness, values and attitudes, skills and behaviour needed for sustainable development. Education needs to explain not only the physical and biological environment but also the socio-economic environment and human development". This implies that there is a need throughout the world in sectors in addition to the education sector to participate collectively in finding solutions to environmental problems that are becoming detrimental to current and future generations through the use of education. Holsman and Dark (2001) indicated that the due to lack of training and exposure, teachers do not feel sufficiently competent to teach EE themes, especially the experiential learning component, and as a results EE projects are implemented in a fragmentary, uncoordinated way, and much of the work is left to NGOs. The Environmental Education Association of Southern Africa (EEASA) was established with the aim of supporting teachers in schools and to manage EE projects, although they are being poorly integrated into school curricula (DEA & T, 2001).

The Eco-schools movement is an international movement to advance and support environmental educational programmes. This movement was also introduced in South Africa with the intention to integrate Eco-schools as part of the CAPS curriculum to enhance environmental awareness amongst school communities. The aim of the Eco-Schools project is to improve environmental management and environmental learning at schools. Teachers, learners, and community members jointly undertake a project to improve an aspect of environmental management at their school. The Eco-schools programme aims to promote whole school involvement, so, ideally, everyone should be involved, the staff, learners,

parents, school governing board (SGB) members and other community members (WESSA, 2013). WESSA programmes in schools give the opportunity to learn (OTL) how to manage EE projects to teachers, learners, and the parents. The Eco-Schools programme is an ideal way for schools to embark on a meaningful path towards improving the environmental footprint of a school, a change which inevitably leads to a more sustainable, less costly and more responsible school environment. According to Wildlife and Environment Society of South Africa (WESSA, 2015), the Eco-Schools programme introduces themes such as resource use, biodiversity, local and global issues, healthy living and community and heritage, which are in line with CAPS to make it easier for teachers to identify suitable themes.

In Australia, the Department of the Environment and Heritage (2005) stated that, for effective EE in schools, it requires the involvement of all stakeholders such as the leadership team, the administration staff, the teaching staff, the ground staff, the canteen staff, the parents, the students and the local community. This view was supported by Smith, Collier, and Storey (2011) who alluded that the Australian Association for Environmental Education, Waste Management Association Australia, Australian Water Association, and the Marine Education Society of Australasia worked together for the creation of a national approach to professional development for sustainability educators in Australia. This implies that the involvement of different stakeholders in schools towards the management of EE projects is of necessity. Different environmental organizations are essential in playing a role of support, developing and equipping teachers with relevant knowledge and skills necessary for teaching environmental education in schools. According to Gough (2011), Goal 2 of the Australian National Goals and National Curriculum stipulates that "...All young Australians should become successful learners, confident and creative individuals, and active and informed citizens'. Despite giving individual learners the opportunity to actively participate in environmental sustainability, the good thing is that this goal supports environmental education in the classroom. In this regard, learners are given the opportunity to learn (OTL) on how to sustainably conserve the environment. Moreover, Gough (2011) also indicated that Australia is focusing on the development of the Australian curriculum as both a cross-curriculum priority and as a separate subject. In many parts of the world such as South Africa EE is integrated into curriculum subjects and there is no initiative to make it a stand-alone subject, irrespective of how UNESCO and UNEP conferences and workshops on environmental education (such as those held in Belgrade in 1975 and Tbilisi in 1977) put emphasis on the importance of environmental education.

According to Allen and Downie (2009), Tanzania has a National Environmental Action Plan (NEAP) that covers six major environmental problems that urgently need attention. These are a loss of wildlife habitats (biodiversity), deforestation, land degradation, deterioration of aquatic systems, lack of accessible clean water and pollution. The EE and communication organization are responsible for community outreach with the aim of improving public environmental awareness and promotes both formal and non-formal EE learning opportunities. However, despite the difficulties involved in integrating environmental content in the curriculum, teachers involved in knowledge sharing and skills acquisition from the environmental NGOs tend rarely communicate to environmental issues and are not involved in teaching subject matter related to the environment and/or leading outdoor activities with students (Allen & Downie, 2009).

The objectives of initiating, implementing and managing EE projects in schools are to create awareness, to increase knowledge about environmental issues, to create positive attitude change among learners, to foster skills acquisition, to encourage active participation and to share opinions on issues related to the environment. This finds support in the UNESCO (1978) definition of EE referred to earlier. Schools and environmental NGOs should work hand in hand to successfully manage EE projects in schools with the aim of sharing knowledge, skills, attitudes, and motivation, and commit collectively to solving the environmental problems identified. This section is followed by a scholarly review on the integration of EE into curriculum subjections with the intention of managing EE projects in schools.

5. The integration of EE into Curriculum Subjects

According to United Nations Conference on Environment and Development, UNCED (1992) stated that EE has been integrated into the school curriculum because international communities have taken cognizance of the impact of human activity on the environment and realized that education is seen as a means for reversing the growing environmental degradation. The integration of EE simply means incorporating EE into other curriculum subjects as a cross-curricular theme. This approach constitutes a multidisciplinary or holistic curriculum approach to EE in terms of which EE themes are viewed through the lens of different curriculum subjects (Lacey & Lomas, 2013). According to the Department of Environmental Affairs and Tourism, (DEA&T, 2001), In South Africa, environmental degradation is seen as responsible for the depletion of valuable life-supporting resources and as posing an enormous threat to human society. Education is therefore seen as a means to mitigate the detrimental effects of poor environmental practices, through the management of EE projects in schools as well as the creation of environmentally literate citizens.

In South Africa, CAPS is the official standardized and content-based curriculum across all grades (grades R-12) underpinned by the fundamental values and principles of the Constitution of the Republic South Africa. CAPS emphasizes the integration of environmental themes in most of schools subjects (DBE, 2012). According to the White Paper on Education and Training (South Africa, 1995) "Environmental education, involving an interdisciplinary, integrated and active approach to learning, must be a vital role of all levels and programmes for the education and training system in order to create environmentally literate and active citizens and ensure that South African citizens, present, and future, enjoy a decent and quality life through the sustainable use of resources."

This implies that teachers should integrate EE in their subjects and also actively involve learners in learning about environmental issues through participating in EE projects as part of becoming active citizens who will preserve the environment for future generations. According to Du Plessis (2005) CAPS, requires a learner-centred approach, since it requires adjustment on what to teach (curriculum) and not only how to teach (teaching methods). This implies that learners are to make important decisions about environmental issues through participating in EE projects as part of the curriculum and that EE projects in schools can foster a sense of responsibility in learners, give them the opportunity to learn (OTL) and encourage them to leave a legacy for future generations. Opportunity to learn (OTL) is regarded as a multiplicity of factors, such as curricula, learning materials, facilities, teachers and instructional experience that create the conditions for teaching and learning (Scherff & Piazza, 2005).

In South Africa, the integration of EE was piloted in June 2001. This was done mainly to give formal recognition to EE in the South African school curriculum. Despite that, EE processes were not generally a compulsory feature of teacher education, teachers were not appropriately qualified to integrate EE themes in curriculum subjects, and this had negative repercussions for the piloting process since only individual teachers and schools with an interest in EE were involved in EE projects (DEA & T, 2001). Orr (2004) and Peden and Roff (2005) expressed the view that learners need to start discovering and valuing the natural world and understand their relationship with it. Integrating EE in the CAPS subjects is a significant step, not only for learners to have the opportunity to learn about environmental issues, but also creating the mutual working relationship between teachers and the NGOs in managing EE projects in schools.

According to Department of the Environment and Heritage (2005), EE has been a part of Australian education since 1970. Emanating from the Tbilisi World's first intergovernmental conference on environmental education, Australia also adopted the holistic approach to environmental issues with a special focus on the "fostering clear awareness of, and

concern about, economic, social, political and ecological interdependence in urban and rural areas; to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment; and to create new patterns of behaviour of individuals, groups and society as a whole towards the environment" (UNESCO, 1978). Australia adopted a whole-school approach, working across all curriculum subjects such as English, creative arts and health and physical education. The integration of EE in Australia is mainly to foster the effective regular use of learner-centred, interactive teaching and learning strategies that encompassed new learning and productive pedagogy (Department of the Environment and Heritage, 2005).

It is important for teachers to understand how to integrate EE into their curriculum subjects. The necessary orientation focusing on equipping teachers with knowledge and skills to integrate EE into their subjects is of fundamental essential. According to Australian Curriculum Assessment and Reporting Authority, "Education for sustainability develops the knowledge, skills, and values necessary for people to act in ways that contribute to more sustainable patterns of living. It is futures-oriented, focusing on protecting environments and creating a more ecologically and socially just world through action that recognizes the relevance and interdependence of environmental, social, cultural and economic considerations". Education for sustainability and the Australian Curriculum Project (2014) alluded that Lonergan research stated that teachers in Australia lacked awareness, lack of comprehension, engaged teaching practices in their classrooms, and lack knowledge of how and where to integrate. This implies that there is a need for teacher training regarding the integration of EE in other curriculum subjects.

In Tanzanian education and training policies require EE to be integrated into all curriculum subjects (Kimaryo, 2011). However, despite the fact that EE forms part of the primary school curriculum, it is not integrated on an equal footing in all subjects. There are a number of reasons that are associated with the neglecting the teaching EE themes within curriculum subjects. Kimaryo (2011) explains that, since EE content is not stated clearly in the syllabi for different subjects when it comes to the actual teaching in the classroom, teachers have to search for environmental content in sources such as books, magazines, and newspapers. Puk and Makin (2006) also stated teachers omit ecological literacy theme within their subjects due to lack of time in the curriculum, lack of resources; lack of teacher training, and lack of support from school board and parents. Pellegrino and Hilton (2013) emphasized the demands made by the integration of EE into other subjects in terms of time, resources and teacher. Other difficulties are the status of EE and lack of acknowledgment that environmental learning is integral to the curriculum, teachers' inadequate knowledge about the environment and environmental issues, lack understanding of the relevance of EE and constraints related to learning support materials (Le Roux & Maila, 2004).

Kimaryo (2011) points out the importance of developing knowledge, skills and positive attitude in the context of how to interact with the environment. It is, therefore, imperative that teachers integrate EE in order to create a sense of ownership of EE projects in schools, and give them the opportunity to learn (OTL) and care for their environment. Learners also acquire knowledge, skills, values and a positive attitude towards protecting and caring for their environment. Despite the importance of EE, the approach used to integrate EE into primary school education, in fact, seems to marginalize it, because EE content and skills are not stated explicitly in the syllabus of different subjects. Furthermore, teachers are not trained to teach EE (Kimaryo, 2011).

Despite the challenges with regard to integration of EE into other curriculum subjects and the lack of teachers' pedagogical training, exposing learners to EE projects can yield good results regarding knowledge, skills, and positive attitude towards the environment, and develop understanding on how to manage the environmental problems (Kimaryo, 2011, & Tilbury, 1997). This implies that the integration of EE themes into curriculum subjects can give both the teacher and learner the OTL on how to sustainably manage EE projects in

primary schools. The next section contains a discussion of the role of environmental NGOs as well as the conceptual framework of the case study.

6. Conceptual framework

The theory that underlies this case study is the Total Quality Management theory (Deming, 1986). Total quality is about conformance quality and explains management methodology in any organization as a form continuous improvement in quality and success for the long term. TQM approach acts as an effort to the teaching and learning process, accepting leadership, empowering and motivating and rewarding (Bunglowala & Asthana, 2016). In this case study, Total Quality Management (TQM) is viewed as a fundamental theory to be employed by environmental NGOs in enhancing continuous improvement in the quality and motivating teachers to optimize their actions toward managing EE projects in primary schools.

As part of the examination of the working relationship and sharing of knowledge and skills between environmental NGOs and school teachers for the purpose of managing EE projects in schools, the concept of opportunity to learn (OTL) was employed in this study. OTL is regarded as the multiplicity of factors that create the conditions for teaching and learning, such as curricula, learning materials, facilities, teachers and instructional experience (Scherff & Piazza, 2005). In the study, the environmental NGOs have the opportunity to teach, while the school teachers have the OTL; the latter entailed learning in a variety of ways of managing EE projects. However, teachers have the opportunity to teach in the form of teaching learners about EE issues in different subjects. Teachers are required to integrate environmental education themes into the curricular subjects (DBE, 2012).

This implies that teachers have to learn how to manage EE projects, how to involve learners and devote time to EE projects, and also how to take instructions from environmental NGOs as part of acquiring knowledge, skills, and experience. According to Flodden (2002), OTL entails the provision of instructional experiences that enable learners to achieve high standards. In South Africa, school teachers are viewed as being responsible for teaching and learning in the classroom as stipulated in the Employment of Educators Act of 1998. CAPS (2012) speaks about the integration of EE themes in CAPS subjects. However, little has been done with regard to training teachers in managing EE programmes in schools. This creates discord between teachers and environmental NGOs since teachers do not see managing EE projects as part of their job description.

Cooper and Liou (2007) view OTL as a powerful analytical tool that has the potential to result in progressive policymaking able to transform the culture among school teachers in managing EE projects. For Reeves and Muller (2005) OTL is the degree of overlap between the content of instruction and what is tested. School teachers need to be open to ways of managing EE projects within the context of their individual schools'. The hope is that, given the opportunity to learn how to integrate EE themes into curriculum and assessment policy statement subjects, teachers will eventually become skilled at managing EE projects, and thus contribute to the continuity of the management of EE projects by NGOs in schools.

7. Research methodology

7.1 Research design

This single case study employed a qualitative research approach. The Interpretivist paradigm was used to explore the views of a school teacher's regarding the support by environmental NGOs managing EE projects in primary schools. A purposive sampling approach was used to sample (n=13) primary school teachers who worked with environmental NGOs in managing EE projects in their schools (McMillan & Schumacher, 2010; Creswell, 2007. De Vos, Strydom, Fouché & Delpont, 2011).

This single case study strategy was employed as being suitable for providing the required in-depth examination and analysis of the information regarding the following two research questions: to what extent are environmental NGOs giving support to teachers in order to manage EE projects in schools? Are teachers able to integrate EE into curriculum subjects with the intention of managing EE projects in schools? (McMillan & Schumacher, 2010; Babbie, 2010). From the semi-structured interviews, the researcher was able to acquire in-depth information which informed the research into the teachers' views regarding the integration of EE into the curriculum and the support given by NGO's in managing EE projects in primary schools. Individual participants signed consent forms. Confidentiality was maintained throughout the research project, and no information was made available to unauthorized persons. School teachers participated voluntarily in this study (Burns & Grove, 2005). The qualitative data, gathered through semi-structured interviews was analysed according to themes. Prior the empirical investigation, the researcher conducted literature study on the integration of EE into curriculum subjects and the role of environmental NGOs in managing EE projects in schools (MacMillan and Schumacher 2010).

7.2 Findings and discussions

The study reported on aimed at exploring the teachers' views regarding the support given by NGOs to the management of EE projects in primary schools. To further explore this view, the researcher also explored the views of teachers regarding the integration of EE into the curriculum subjects with the intention of managing EE projects in schools.

The findings of this study are presented as they relate to the two research questions, namely: to what extent are environmental NGO's giving support to teachers in order to manage EE projects in schools? Are teachers able to integrate EE into curriculum subjects with the intention of managing EE projects in schools? The findings are presented and discussed below.

The following themes emerged from the data analysis process, the role of environmental NGOs in managing EE projects in schools and the integration of EE into curriculum subjects. Participants are referred to as AE#1--13.

7.3 The role of environmental NGOs in managing EE projects in schools

Teachers responded differently concerning the 'role of environmental NGOs with regard to managing EE projects in primary schools'. This suggests that teachers from different schools had had different experiences regarding the role of NGOs in managing EE projects in schools. Teachers' views on the taking responsibility to manage EE projects in schools differ. Despite the fact that some teachers are of the opinion that NGOs should manage the EE projects without their involvement since their job is that of teaching in the classroom, some hold a different view since they think that they should work together with NGOs as co-workers in managing EE projects. Teachers also alluded that they should be offered a professional training on how to manage the EE projects in schools. There was also a concern raised with regard to some teachers indicating that EE projects should focus on curriculum themes that are being taught in schools, other than NGOs' scope of EE projects to be managed in schools. Some teachers were of the view that EE projects should be able to address the schools' environmental challenges and its surrounding area. However, to some teachers managing EE projects is viewed as a burden that distracts them from teaching learners in the class, as indicated by the coordinator of food and nutrition teacher below.

Teacher AE# 11 indicated that "I do not have a problem of NGOs managing EE projects in our school, but I think that teachers should be the co-owners of the EE projects since we have a big influence on learner's participation". While teacher AE# 1, stated that, "It is good, if NGOs are managing the EE projects, they will be alleviating the load we have. We will concentrate on teaching in class, while they will be running with the practical aspect of the subject content taught in class". . Teacher AE# 3, stated that "I think we should be trained

by NGOs on how to manage the EE projects. It is better to be taught how to fish than to be given a fish". Teacher AE# 13 alluded that, "EE projects should focus on the themes that are being taught". Teacher AE# 8 indicates that "As a teacher and coordinator of the school nutrition programme in our school, I find it difficult to manage the project, I often find myself out of class, neglecting teaching and learning and implementing the nutritional project. There is a serious lack of support from other staff members".

Some teachers view the role of NGOs as that of giving them the opportunity to acquire knowledge and skills on how to manage EE projects in their schools. This clearly indicates that teachers do not have the knowledge on how EE projects should be managed in schools. Teachers also indicated that they lack the knowledge on how to manage resources and funds that are allocated in towards the EE projects, and would like to learn that from the environmental NGOs. It is also the view of some teachers that, NGOs should be able to assist teachers in motivating teachers who seem not to be interested managing EE projects in schools since they are of the view that it is an extra work.

Teacher AE#10 indicated that "I would love to acquire knowledge and skills on how to manage EE projects in schools. NGOs should enable us to be trained on how to manage EE projects for the sake of maintaining the sustainability of the EE projects in schools". Teacher AE# 2, stated that "We often have NGOs coming to schools to manage EE projects without the involvement of teachers. We do not know how to manage resources, funds, and challenges that emanate with the management of EE projects since we are not trained in this field". Teacher AE#5, states that, "the curriculum is already overcrowded, and teachers are often working towards the completion of the syllabus. Bringing in EE projects on top of teaching integrated themes is such an overwhelming thing. EE projects should mainly be allocated to be managed by NGOs. They have resources, funds, and experts to manage EE projects".

With reference to the role of environmental NGOs in managing EE projects in schools, the results of this study show that most teachers were in favour of NGOs involved in managing EE projects in their schools. This is also supported by Holsman and Dark (2001) who observe that in most of the schools in South Africa the management of EE projects, is fragmentary and uncoordinated, and much of the work is left to the NGOs. This is because teachers do not have the necessary professional training or knowledge and skills on how to manage EE projects in schools. It emanates from this study that, some teachers felt rather concentrate on teaching EE themes in class while NGOs are tasked to manage EE projects. On the other hand, some teachers felt that they needed to be trained by NGOs on how to manage EE projects in schools with the aim of ensuring the sustainability of EE projects. WESSA (2013) concurs and supports the idea since it promotes the participation of all staff, learners, parents, SGB members and other community members in managing EE projects in schools for the sake of sustainability. In this way, teachers have the OTL to acquire knowledge and skills relating to the management of EE projects, while learners are also given the OTL about environmental issues in schools. With reference to the international experience, Allen and Downie (2009), report on the involvement of the Environmental Education and Community Organisation in community outreach in Tanzania with the aim of improving public environmental awareness and promoting both formal and non-formal EE. This shows the importance of NGOs in the management of EE projects.

7.4 Integration of EE into curriculum subjects

Teachers held different views regarding the 'integration of EE into subjects with the intention to manage EE projects in schools', which suggests that teachers from different schools, do not have the same view regarding integration of EE into curriculum subjects. Some teachers indicated that they view EE as a subject which was supposed to be taught separately from others, while other think that EE should be integrated into other curriculum subjects. This perception on its own raises eyebrows regarding the integration of EE, regarding the management of EE projects in schools.

However, despite the positive attitude responses from some teachers with regard to the integration of EE into other curriculum subjects, it seems that for most teachers, the integration of EE into other curriculum subjects means overloading teachers with administrative work and teaching responsibilities which makes it very difficult to manage EE projects to the best of their abilities. Teachers also indicated that integrating EE into their subjects is a burden or extra work which demands more teaching time. Water-wise days and Arbour days which form part of EE themes in curriculum subjects are viewed as extra work since they also demand giving learners the opportunity to experiment outside the classroom.

Teachers AE# 2 and AE# 7 responded as follows: "Integration of environmental education entails that EE as a subject is incorporated into other school subjects such as Mathematics, Science, and Geography". "Integration of EE implies that different EE themes are to be taught in different School subjects" AE#5. Teacher AE# 9 stated that "Integration" implies that two entities are joined together to form one, an example in Social Science a theme on "Pollution". Teacher AE# 4 stated that "Teaching environmental education is an extra work, more especially when the themes require learners to conduct certain activities which are to be conducted outside the class". Teacher AE # 3 alluded that "Teaching EE demands more teaching time".

On the other hand, several positive responses emerged on teaching environmental education. To some teachers, integrating EE in their subjects benefits learners, since it raises awareness and gives an opportunity for learners to acquire knowledge and skills. Other teachers also highlighted the view that integration of EE exposes learners to learning how to recycle and to keep their environment clean. Very few teachers echoed that integrating EE into their subjects gives the opportunity to learners to plan on how to manage EE projects that are related to EE themes. Teacher involvement of learners in collective planning and collaboration in specific EE projects that is interesting to learners can also advance their knowledge, skills, and values in EE projects. The response of these teachers reveals that some teachers are willing to integrate EE into their subject despite not receiving formal training.

Teacher AE#6 stated that "Teaching environmental education themes into my subject raised awareness and equipped my learners with knowledge and skills on how to manage their local environmental problems". Teacher AE# 11, highlighted that "Recycling EE project taught my learners to keep the school environment clean, and this is as a result of integrating EE into my subject". Emanating from the responses under this theme, teachers were asked how they initiated, implemented and managed EE projects in their schools. This led to the third Teacher AE#5 says that "While integrating EE themes in my subject, I involve learners to plan on how to start EE projects that are related to the EE theme"

The results of this case study indicated both similarities and differences in the manner in which teachers perceived the integration of EE into curriculum subjects. Under this theme and categories, some teachers viewed the integration of EE as the incorporation of EE as a subject into the curriculum, while others viewed it as themes emerging in subjects. According to Lacey and Lomas (2013), integration of environmental EE constitutes a multidisciplinary or holistic curriculum approach to EE, according to which EE themes are considered through the lens of various subjects in the curriculum. In response to later study conducted by Lacey and Lomas, one positive outcome was that, both teachers had an idea of what integrating EE is all about, although they held different views regarding theme and subject: one viewed EE as a subject on its own, while the other viewed it in terms of themes that can be taught in different subjects.

On the other hand, it emerged that teachers in this study viewed teaching EE as extra work and time-consuming. The researcher is of the view that this impacting on the quality of teaching and learning EE in these schools. This sentiment echoed by these teachers concurs

with the view of Puk and Makin (2006). Moreover, it emerges that some teachers held a different view, regarding the teaching of EE, indicating that their learners benefiting from EE, because they collectively plan and involving learners with regard to EE themes and projects. Kimaryo (2011) concurs and support the idea that teachers must involve learners, by developing knowledge, skills and create a positive attitude in relation to interaction with the environment. But, unfortunately, none of the teachers who participated in this study had EE qualifications that would have helped them to integrate EE themes and specific projects in their curriculum subjects (Department of Environmental Affairs and Tourism, 2001). Even though teachers might be teaching EE themes, but they are not professionally trained in teaching EE and they may not necessarily be teaching it the same way or using same approaches that offer learners the same opportunity to learn. With reference to an international perspective regarding EE, a study conducted by Puk and Makin (2006), revealed that EE is important and equips learners with awareness and knowledge about the environment and fosters the development of the skills, attitudes, and motivate learners to make informed decisions and take responsible actions that incorporate environmental considerations.

Despite the positive findings in this study, several challenges came to the fore, which were alluded to by teachers. The study reveals that teachers were not professionally empowered with the necessary knowledge and skills to execute the professional responsibilities in a meaningful and effective manner. Therefore, they struggle to integrate EE with other curriculum subjects and view it as extra work and time-consuming. However, some teachers considered the integration of EE as giving learners the opportunity to learn about their local school environmental problems although lack of knowledge about how to integrate EE into other subjects compelled some of the teachers to shift the responsibilities to NGO's since, they seemed to have the required knowledge, human resources, funds and skills relating to environmental issues. Broom (2017:1) cited Broom (2011) who concurs and supports the views of teachers by indicating that "ecological identity, encompasses individual's knowledge of, reverence for and actions towards the environment". It is, therefore, recommended that teachers should be re-skilled in how to integrate EE into their subjects and manage EE projects successfully. The attitudes of teachers towards managing EE projects need to be rejuvenated since actions of individuals aimed at choosing to engage is essential towards achieving the aims (Broom, 2017).

8. Conclusion

The integration of EE into curriculum subjects and the involvement of environmental NGOs in managing EE projects in schools is the applied approach in South Africa and other parts of the world. In South Africa, as indicated in CAPS (2012), EE is to be integrated into all subjects. In order to respond to the concerns of teachers with regard to the lack of knowledge and skills relating to how to integrate and teach EE, it is imperative that the department of education should consider professional in-service training for teachers. This would boost the confidence of teachers in managing EE projects dealing with schools and local environmental issues. Teachers should also be given the opportunity to suggest new approaches to teaching EE, such as introducing EE as a subject, introducing themes rich in EE content, and cross-curricular EE projects.

There is no doubt that both in South Africa and in other parts of the world, environmental NGOs are influential in managing EE projects in schools. This makes it crucial that each school should partner with an NGO in order to acquire the necessary knowledge, skills, and resources to initiate, implement and manage its own EE projects and also to sustain those already in existence as a means to inculcate in learners a strong and deeply-held conviction about the need to conserve the planet in all its facets.

References

- Academy, Vol. 101B, No.1/2, From Paleoecology to Conservation: An Interdisciplinary Vision (Dec. 2001), pp. 151-156. Royal Irish Academy.
- Allen, I. & Downie, B.K. 1999. School-Community Linkages. Success factors of Conservation clubs in Tanzania. GreenCOM Project, Academy for Educational Development, 1825 Connecticut Ave., NW Washington DC 20009. The United States of America.
- Australian Curriculum Assessment and Reporting Authority (ACARA) Sustainability, a cross-curriculum priority in the Australian Curriculum
- Broom, C. 2017. Exploring the relations between childhood experiences in nature and young adults' environmental attitudes and behaviour. *Australian Journal of Environmental Education*, 33 (1), 34-47. <https://doi.org/10.1017/aee.2017.1>
- Bunglowala, A. & Asthana, N. 2016. A Total Quality Management Approach to Teaching and Learning Process. *International Journal of Management (IJM)*. 7(5), 223-227. Article ID: IJM_07_05_021.
- Cooper, R. & Liou, D. 2007. The structure and culture of information pathways: Rethinking opportunity to learn in urban high schools during the Ninth grade transition. *The High School Journal*, 91(1):43-56. <https://doi.org/10.1353/hsj.2007.0020>
- Deming, W.E. 1986. *Out of the Crisis: Quality, Productivity, and Competitive Position*. Cambridge, MA: Cambridge University Press.
- Department of Environmental Affairs and Tourism. 2001. *A Strategic Framework for Environmental Education in South Africa*. Pretoria.
- Department of the Environment and Heritage 2005. *Education for a sustainable future. A National Environmental Education Statement for Australian Schools*. Curriculum Corporation, Carlton South Vic 3053. www.deh.gov.au/education
- Du Plessis, L. E. 2005. *The implementation of Outcomes- Based Education in the Eastern Cape. A management perspective at the micro level*. Unpublished D.Ed. thesis, UNISA.
- Flodden, R.E. 2002. The measurement of opportunity to learn. In AC Porter & A Gamoran (eds), *Methodological advances in cross-national surveys of educational achievement*. Washington, DC: National Academy Press.
- Hochfeld, T; Graham, L; Peter, K; Patel, L; Nyathela, T. & Moodley, J. 2013. *Evaluation of Tiger Brands Foundation's Pilot In-School Breakfast Feeding program*. Auckland Park. The University of Johannesburg.
- Jeffrey, D.W. 2001. *The Roles of Environmental Non-Governmental Organizations in the Twenty-First Century*. Biology and Environment: Proceedings of the Royal Irish.
- Kimaryo, L.A. 2011. *Integrating environmental education into primary school Education in Tanzania. Teachers' perceptions and Teaching Practices*. Pargas: Åbo Academy University Press.
- Le Grange L & Reddy C 1997. Environmental education and outcomes-based education in South Africa: A marriage made in heaven? *South African Journal of Environmental Education*, 17:12-18.
- Le Roux, C. & Maila, W. 2004. Issues and challenges regarding environmental education policy implementation. Pretoria: UNISA. <https://doi.org/10.1080/18146620408566282>
- Mokhele ML & Jita LC 2008. Capacity building for teaching and learning in environmental education: The role of the public/private partnerships in the Mpumalanga province of South Africa. *Journal of International Cooperation in Education*, 11(3):39-54.
- Monroe, M.C., Day, B.A. & Grieser, M. 2002. GreenCOM Weaves Four Strands. In *Heating Up Society to take Environmental Action* (pp3-6). Academy for Educational Development. Washington DC.
- Nordström, H.K. 2008. Environmental Education and Multicultural Education: Too close to be separate? *International Research in Geographical and Environmental Education*, 17 (2), 131 – 144. <https://doi.org/10.2167/irgee232.0>
- Palmer, J. 1998. *Environmental Education in the 21st Century: Theory, Practice, Progress and Promise*. London: Routledge.
- Peden, M. & Roff, J. 2005. 'Getting to the core of environmental education. *Environmental Education Bulletin*, 28: 23-26.

- Pellegrino, J.W. & Hilton, M.L. (Eds.). 2013. Education for life and work: Developing transferable knowledge and skills in the 21st century. Washington, D.C.: National Academies Press.
- Puk, T. & Makin, D. 2006. Ecological consciousness in Ontario elementary schools: The truant curriculum and the consequences. *Applied Environmental Education & Communication*, 5(4), 269-276. <https://doi.org/10.1080/15330150601088968>
- Reeves, C. & Muller, J. 2005. Picking up the pace: Variation in the Structure and Organization of learning school mathematics. *Journal of Education*, 37:104-130.
- Scherff, L. & Piazza, C. 2005). The more things change, the more they stay the same: A survey of high school students' writing experiences. *Research in the Teaching of English*, 39(3):271--304.
- Singh, H.R. & Rahman, S.A. 2012. An approach for Environmental Education by Non-Governmental Organizations (NGOs) in Biodiversity Conservation. University of Technology MARA (UiTM). Malaysia. <https://doi.org/10.1016/j.sbspro.2012.04.175>.
- SOUTH AFRICA. 1995. White Paper on Education and Training. Cape Town: Government Press.
- Tilbury, D. 1997. Environmental education: Ahead, heart and hand approach to learning about environmental problems. Hong Kong: The University of Hong Kong
- Ulleberg, L. 2009. The role and impact of NGOs in capacity development from replacing the state to reinvigorating education. International Institute for Educational Planning. Paris: UNESCO.
- UNCED. 1992. Agenda 21. Rio de Janeiro. (Chapter 36, p 2). Orr, D.W. 2004. Earth in mind: on education, environment, and the human perspective. (10th Anniversary Edition), first published in 1994. Washington: Island Press.
- UNESCO. 1978. The Tbilisi Declaration. *Connect*, 111 (1), 1-8. UNESCO-UNEP Environmental Education Newsletter. <https://doi.org/10.1080/0140528790010114>
- WESSA. (2013). Eco-Schools program handbook. Foundation for Environmental Education. South Africa. www.wessa.org.za
- www.australiancurriculum.edu.au/CrossCurriculumPriorities/Sustainability (Accessed on 2017/10/22).