Eco. Env. & Cons. 26 (4) : 2020; pp. (1629-1635)
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ISSN 0971–765X

Perceptions of environmental education integration in South African Schools

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(Received 30 March, 2020; accepted 28 April, 2020)

ABSTRACT

The purpose of this study is to explore how teachers and learners in the South Coast area of Kwa Zulu-Natal perceive the integration of environmental education (EE) into the curriculum. The school grounds in this area are not well taken care of and there are no manicured gardens, and the apathy towards the environment is also displayed in the fact that there are no environmental clubs at the schools. Learners' indifference to the environment is evident in their behaviour, as they simply throw their litter including food wrappings, papers and bottles on the school grounds and stairways and do not use the bins provided. The data for this research was collected using face-to-face interviews with teachers and focus group interviews with learners. In this way, we were able to understand how learners and teachers perceive the environment and we then got to understand how they perceive the integration of EE in school. The findings of this study proved that there is a lack of knowledge about and caring for the environment, which can be attributed to the contradiction that exist between the EE guidelines and policies provided by the Department of Education (DoE) and the teaching practices of teachers. This study further revealed that learners' views about the environment is strongly influenced by the perceptions of teachers, as teachers are considered their role models.

Key words : *Environment, Environmental education, Curriculum assessment policy statement (CAPS) and Education for sustainable development (ESD)*

Introduction

Our world is currently undergoing rapid ecological change. There are many factors that we sometimes do not pay attention to, that negatively affects our environment and it is the things we treasure the most that are destroying our environment. For instance, human activities, such as mining,have given rise to a robust economy in our country, South Africa, but it is this very activity that is affecting our environment.

The concern is whether teachers are grooming the next generation to be environmentally aware or whether this generation will be ignorant to the ecological concerns that are dominating discourse internationally. Is this a generation who does not care about their environment, but only cares about what they can extract from the environment? Or are we grooming ecological ambassadors, who are concerned about the environment and who will defend the rights of future generations to live in an environmentally sound planet, and who will also develop ways in which our environment can be sustained. We know that if we continue with this behaviour, we will end up destroying the planet. Learners should be made aware that all the things that makes up the planet will be wiped out if it is not preserved or if it is not taken care of. Bearing all this in mind,

there is a great need for the teaching and learning of EE. We believe that EE is a process, whereby the nation is taught about everything that concerns their surroundings. The "nation", refers to the young people, who will someday lead this country and make decisions that will shape the state of our environment and our very existence.

The aim of this study was to explore teachers and learners' perceptions regarding the integration of (EE) into the curriculum. The research was conducted in three secondary schools, on the South Coast, in Kwa Zulu-Natal (KZN). There is worldwide concern about the continuous ecological degradation of the environment, which demands that individuals change their thinking and practices (Kimaryo, 2011). Education is perceived as an essential tool in the drive to raise awareness of the importance of the conservation of nature, as schooling contributes to the development of information, aptitudes, qualities and critical thinking among the general population (Kimaryo, 2011).

Learning can take place anywhere, in any way and at anytime. Learning also takes place in the home, as families teach their children about the values, culture and traditions of their community. However, most formal education takes place in schools. Thus, schools are an ideal place for EE because, when learners are taught in school, they can take what they have learnt and practically implement it in their homes and in their community. The necessity for EE has been stressed at many intergovernmental gatherings, as it is a mechanism for addressing ecological issues. At these conferences, it was proposed that the different agencies ought to take steps to determine the global programmes for EE and that into the national school curricula. Table 1 below indicates the various international conferences that have been hosted over the years to promote EE.

As indicated by the Department of Basic Education (DBE 2011), one of the standards of the National Curriculum Statement (NCS), from Grade R to 12, states: "social and environmental justice and infusing such practices into their aspects of life to ensure, the rights of people and inclusivity, as stipulated in the Constitution of South Africa (SA)" meaning that, as learners learn about their environment they need to acquire skills that they will use in their daily lives.

The government is challenged with increasing and pressing environmental problems, but it seems powerless to prevent them. All this is happening because of human demands on nature as well as technologies that we use to satisfy and improve our lives. Despite the drive to promote EE over many years, there has been little implementation in this country, nor has there been any state-driven endeavour that has embraced EE in the formal school curriculum. Mosidi (1997) states that the first attempt to implement EE into the school syllabus was through the White Paper on EE, in 1989. Kimaryo (2011) contends, however, that EE was included in the educational syllabus in South Africa as early as in 1960 and was also highlighted in the Educational Training Policy (ETP), in 1989, but there was little evidence of progress in its implementation. The priority today, should be practical implementation of EE, on a global scale (Palmer, 2003). In support of Palmer's proposal, the schools in SA should have a clear understanding of how EE should be implemented.

Schools are based within communities and schools should, therefore, be a positive influence on what happens within those communities. However, Kimaryo (2011) states that EE has not been taught like it should have been in schools. For example, Lindhe (1999) revealed that there is no impact in communities from the teaching of EE in Tanzanian schools. Wehmeyer (2017) disclosed that people are unaware of ecological issues, even if they were edu-

Table 1. Conferences promoting EE

	Bodies	Years
1.	The United Nations (UN) Conference on the Human Environment (HE), in Stockholm	1972
2.	The Belgrade Charter Conference, by the United Nations Educational Scientific and Cultural Organization (UNESCO).	1976
3.	The Tbilisi Declaration, in Georgia	1978
4.	The Brundtland Report, by the World's Commission on Environment and Development (WCED)	1987
5.	Rio Earth Summit, by the UN Conference on Environment and Development (UNCED)	1992
6.	The World Summit on Sustainable Development, Johannesburg	2002

cated. There is, therefore, a huge gap between what has been proposed and what actually happens on the ground. Given this prevailing scenario with regard to the implementation of EE, it is important to conduct a study on teachers and learners' perceptions towards the integration of EE in the classrooms. An understanding of these perceptions will facilitate the discovery of ways in which formal teaching can be improved.

The degradation of nature, mismanagement of waste and litter, degradation of wetlands, deforestation, contamination of land and poor conservation measures are all major ecological issues, but our learners are simply not conscious of them. Even if they are aware, they do not understand what is causing these problems and that it is the activities of the human race that is having an impact on the earth (Dalerum, 2014). While conducting the study, we have seen that learners lack sufficient information about the environment, show no understanding of the impact of their actions on the environment and they have not undertaken any initiatives towards caring for their environment. Some learners toss papers imprudently, anywhere on the school facilities and in their neighbourhood. This garbage most likely enters the storm water drains and streams, contaminating water sources and destroying life that is dependent on aquatic environments. If such solid waste is not recycled, this may lead to diseases that are a threat to human lives.

This research process has revealed that many teachers lack the ability to deal with EE content in the educational programme. It is essential for teachers to acquire an in-depth knowledge of EE, to support practical living for sustainability and which will lead to an improvement in the economy and a better tomorrow. For these reasons, there was an interest in investigating teachers and learners' perceptions regarding the integration of EE in the curriculum.

Research question(s)

Main research question

- What are teachers and learners' perceptions regarding the integration of EE in the curriculum?

Sub-questions

- What are the teachers and learners' perceptions of EE and ESD?
- What teaching practices are used to teach EE effectively?
- How do learners perceive the learning and teaching of EE?
- What impact does the teaching of EE have on learners?
- What challenges do teachers' come across that hinder effective teaching of EE?

The objectives of this paper are to

- Determine the teachers and learner's perceptions of EE and education for sustainable development (ESD)
- Explore teaching practices that are used effectively to teach EE
- Provide guidelines on how EE should be taught
- Determine how learners perceive the teaching and learning of EE in schools
- Determine the impacts of teaching EE on learners
- Address challenges that teachers encounter that hinder effective teaching of EE in the classrooms

Theoretical Framework

The theory that forms the framework for this study is the social learning theory. Social learning theory encompasses "behaviour and observation", a learning method/style that can successfully be used for teaching and learning in the EE classroom, as the teacher can model behaviour towards environmental sustainability, and learners can learn acceptable practices in this regard through observation. In this study, social learning theory will highlight possible ways that learners promote EE when they take teachers as models so that learners could embrace environmentally-friendly behaviour. We are, however, of the opinion that EE has more to do with exploratory learning, as learners need to explore the environment on their own. Since EE has been initiated in all learning areas like Natural Sciences (NS), Social Sciences (SS), Life Orientation (LO) and Technology (TECH), learners should be knowledgeable of the social context within which environmental issues manifest. Everyone interacts with the environment in a certain way. EE cannot be limited to the school setting, but should be extended to the community. It is vital that learners are taught about EE at the school, and informed of how their behaviour impact on the environment to minimise and prevent environmental problems from occurring that are created by human hazardous behaviour. Nabavi (2012) states that SLT promotes

learning developments. Jeffrey (2008) further states that, SLT has been long cited as a vital tool for sustainability and to promote behavioural change. Bandura (1997) speculates that this theory is largely based on the perception that everyone learns through the interactions between living and non-living organisms in the biosphere. In that way, people then develop the same behaviour through observing other people (Bandura, 1997). Through this theory, it has been revealed in this study that learners observe the behaviour of the teacher and then act accordingly.

Methodology

The research approach employed for this study is qualitative research, as researchers will be engaged in the phenomenon in which these participants interacts through observing and interviewing of participants. We chose the qualitative method, because it was convenient, as we collected data from the participants. The case study research design was used for this study, as we aimed at studying conditions at different schools. This research design has allowed us to get first-hand data and we were able to study the different sites, while concentrating on one purpose. We employed the use of face-to-face focus groups interviews and observations as data collection tools. This allowed us to collect intensive raw data from the research sites and we were able to study the behaviours of participants concerning the topic at hand. A purposive sampling technique was employed in this study. The sample size from three schools included three teachers and three focus group interviews with 18 learners (6 from each focus group).

Findings

The findings of this paper indicate that, in most schools, though EE is studied and learners are aware of all the environmental problems, and ways to deal with it, there have been no actions or initiatives undertaken by the teachers or the learners themselves. Furthermore, there is lack of resources to teach EE in the schools and limited time, since the teachers are under severe pressure by the school administrators and the DBE to complete the curriculum. Thus, teachers are not able to instil the importance of environmentally responsible conduct in learners. Therefore, this paper concludes that it is a challenge for teachers and learners to exhibit good environmental behaviour, if people in authority, for example the school management, do not see EE as important.

Discussion of Findings

This section presents a qualitative data analysis and interpretation. Data was analysed using critical questions. It emerged from the qualitative data that all schools were under-resourced, which impacted the teaching of EE negatively. It also transpired that knowledge of EE should be extended beyond the classroom situation.

In regard to where teachers and learners' perceptions on the integration of EE in the curriculum were explored, the findings indicate that teachers seem to be unsure whether EE has been implemented successfully and whether the integration of EE is efficient. Some teachers responded that EE was not supposed to be integrated within subjects, because it needs its own time. They believed they are not even aware whether they are teaching EE topics, because it is not clearly stated on the CAPS documents. It was also suggested that training or guidance be provided on the teaching and learning of EE, since this has been lacking. As researchers, we contend that different teaching practices should be exercised to extent the knowledge of EE among teachers and learners, because anything that involves the environment touches every life.

The **second research question** explored teachers and learners' perceptions of EE and ESD. In this research, most teachers focused on developing knowledge of the environment and education for sustainable development. The assumption is that knowledge is the basis for other levels of thinking and taking action. First, you gain the knowledge and then you make a decision to take action, based on the knowledge acquired. Because of these findings, it can be concluded that teachers perceive EE and ESD differently. The teachers have had different experiences and exposures to the environmental settings, which plays a huge role on their perceptions. This paper shows that teachers and learners are not aware that they are actually teaching and learning about EE in the other subjects, because the topics are clustered together with other topics and they only realised that they are actually talking about the environment when they are making examples. This implies that there is a huge gap that still needs to be

filled, because this shows that the integration of EE within subjects was not of a good idea. This was shown in one of the schools, where the response from participants was that because of this integration, the learners ended up missing important information about the environment, because the topics are not clearly indicated. Teachers agreed that EE needs its own time because it is really important to everyone to know about their surroundings. It can be concluded that the integration of EE into different subjects,has hindered learning and teaching.

The **third research question** explored how learners perceive the learning and teaching of EE. This research question was addressed through the presentation of scenarios, where the learners in the focus groups were requested to suggest ways in which they can solve environmental issues. In this way, they were able to show their knowledge content and ability to apply the skills they have learnt in school. As much as learners gave responses, most of their responses revealed that, they are not sure what they would do if they were to find themselves in those situations. Meaning that there is lack of knowledge on how to mitigate environmental issues. We think teachers have to play a role in ensuring that learners are equipped with skills that they can use confidently, without doubting themselves. Learners perceive the learning and teaching of EE differently from teachers, because learners see learning about EE as something that can offer them ways to solve existing problems, however, they see environmental issues as the responsibility of other people or the communities. On the other hand, teachers see EE as a lifelong solution to existing problems and the problems that may manifest in generations to come. We also see learning and teaching of EE as a lifelong solution to the existing environmental problems and a tool to improve our lives and an opportunity to create much-needed jobs.

The **fourth research question** was addressed through a theme on the impacts of EE. This research revealed that, even though EE has been integrated in all subjects, it has had little impact, if any, in shaping the learners' behaviour towards their environment. We believe that, when knowledge has been acquired, behaviour change is vital. If there is no change in the behaviour, it simply means learning has not taken place. It would seem that teachers do not know the role of EE in mitigating environmental threatening factors, because they also do not know how they would solve the environmental issues they see in their communities. We are of the opinion that you cannot teach something that you do not know yourself. Teachers lacked the skills, because training was not provided to them to teach EE; therefore, it is impossible to change the attitude of the learners, when the attitude of teachers have also not changed. Change starts with one person, who then teaches other people. This is shown in the social learning theory, by Bandura (1989), which opines that people learn by observing the models presented to them, therefore, in this case, teachers can be seen as models, meaning that learners would emulate what they see their teachers doing. It was evident in the discussions that transpired during the interviews that there are no environmental clubs in the area or in the three schools that we researched. This shows that even teachers have a negative attitude towards the environment, as one teacher reported that the view that no one is enforcing good environmental behaviour, because it is seen unimportant to the teachers, school management and even departmental staff.

The **fifth research question** was on the challenges that hinders effective teaching of EE. It clearly shows that even though EE has been integrated in subjects' years ago, nothing much has been done to improve implementation and practice in schools. One of the teachers even suggested that EE should be a subject on its own, so that it there is enough time for the subject to be effectively taught and learnt. This will also give teachers and learners enough time to do practical work, outside of the classroom, and that will allow learners to have first-hand contact with the environment. The teachers' experiences of teaching EE are diverse, as some teachers would teach EE through bringing familiar examples to the classroom and some would teach EE as a topic in the classroom. The teachers are still unsure whether they are teaching EE correctly, as there is no guidance on how EE should be taught, some teachers are not even aware that they are teaching EE, because they do not know the topics that form part of EE. It seems that the challenges experienced by the teachers are the same in all three schools. By addressing these challenges, the government can play a massive role in ensuring that the schools have all the resources for teaching and learning. In addition, the policy makers should ensure that before they release new EE policies in education, they involve teachers, because they are the

ones who interact with learners, therefore, they know what is best for their learners and what is not.

Conclusion

This study was on teachers and learners' perception towards the integration of EE in the classroom it has find out that teachers are overloaded with their work. Therefore, they cannot teach EE at the best of their ability, lack of resources also contributes to the lack of EE knowledge. The study has revealed that there are no enough teaching resources to teach EE and this leads to the lack of EE knowledge to teachers and also learners. This study also revealed that, the idea of outdoor education is seemed like an old fashion way of teaching as learners are no longer taken outside and the idea of learners working in schools has been banned by the DoE. Now learners only learn inside the classroom and leads learners to get bored and exhausted as they are not challenged. This study also concluded that by the doings of the DoE, the learn by doing has been removed from the system, not completely though as there are some activities given to learners to complete on their own, but in an EE perspective it has been removed because EE teaches learners about their environment and it is expected that learners practice in a real life setting on how to care for their environment, therefore, it raises an eyebrow when learners are taught about the environment inside the classroom yet do not interact with it to practice what they have learnt. The teachers said it seems like learners only learn to write exams in nowadays. This study has revealed that there is lack of teacher training on EE as teachers. This study also revealed that teachers and learners lack enthusiasm to take action towards sustaining and taking care of their environment even though they might know ways on how to mitigate environmental threats. By looking at their responses I concluded that teachers and learners are not keen to take any action to solve the environmental problems that we are facing. We believe that this is happening because there is no form of motivation even from our government and department. This study aimed to find out how teachers in public schools interpret and make sense of EE within the new curriculum and what influences this have on learners. Well, the teachers seems to interpret EE the same way as they know the meaning and what is it purpose, but when it comes to actually fulfill that purpose it is not done.

Recommendations

The recommendations of this study are that the EE curriculum be revisited to enable more concise teaching and learning of EE, which will promote action for change rather than learning for knowledge and no initiation after that. A consideration, suggested by the participants, is that Life Orientation be replaced with EE, as a subject on its own, as it educates teachers and also learners about ways to live sustainably within their environment. The participants recommended that there should be outdoor education and the use of Integrated Communication Technology (ICT) in the classroom was also recommended by the teachers through interviews. They stated that we cannot take the learners to the world, we should rather bring the world into the classroom by using technology when teaching EE content and bring back learn by doing by designing assessments that requires learners to be more hand on with their environment in that way EE will be promoted. In this regard, the use of **technology** must be adopted in all schools.

Finally, it is recommended that training on EE be provided for teachers and enough resources must be made available to schools. The teaching and learning of EE could be improved by incorporating field trips and the provision of teaching aids. This paper further revealed that there is actually a link between health education and EE and these two cannot be separated. Teacher training on EE is important to equip teachers with necessary skills. Implementation of environmental club in all schools is also vital from promotion of EE, greening activities and competitions can also help in the promotion of EE. Sufficient time to be granted to teachers and learners to be taken to consideration when developing EE curriculum.

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