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Exploring Strategies for Environmental Education Interventions Through Distributed Leadership in Secondary Schools in South Africa*

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ABSTRACT

Environmental education (EE) allows citizens to explore environmental issues, engage in problem solving by taking action to improve the environment in totality. To solve environmental issues, there is a need for interventions for EE globally. However, there is evidence in the field that there are no interventions in place for EE curriculum management in schools. This research aimed to explore interventions that can be fostered by distributed leadership to manage EE curriculum in schools. The current research adopted a constructivism research paradigm supporting qualitative research approach, employed the descriptive case study research design as well as non-probability sampling, which is purposive in nature, and individual interviews as data collection tools. The participants invited to contribute to the understanding of distributed leadership in schools in the current research is, two subject advisors and three principals. The findings of the current research point that there are no interventions in place to manage EE curriculum. But the research recommended strategies that could help to manage the curriculum of EE. The monitoring of teachers and learners' books were believed to be an intervention to manage the curriculum, likewise, the EE curriculum. However, the current research recommended a buy-in strategy, a need to improve the curriculum to be less theoretical, but more practical. Therefore, it is recommended that the content of EE is revisited to best suit the current human lifestyles.

Keywords: Environmental education, environmental education management, curriculum, curriculum management, distributed leadership

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Introduction

Environmental education (EE) is a process that allows individuals to practically apply the knowledge and skills acquired to care for their environment. In previous studies, EE has been recognized as one of the strategies to help mitigate numerous environmental issues around the world (Edsand & Broich, 2020; Erhabor & Don, 2016; Satyaraouppulet, 2018; Tlhagale, 2005). Several scholars have outlined the purpose of EE as being to develop an environmentally literate citizenry, through inter alia, teaching the citizens about the natural environment, its functions and how people can manage their actions towards the environment (Edsand & Broich, 2020; Erhabora & Don, 2018; Frazen, 2017). Ideally, EE should be implemented in various situations, which include formal, non-formal and informal educational settings and across different levels of education (Ardoin et al., 2020; Erhabora & Don, 2018; Radeiski, 2009; UNESCO-UNEP, 1978).

In schools, the School Management Team and subject advisors often referred to as stakeholders, are not aware of their roles when it comes to the management of EE curriculum. The stakeholder's role in EE is to ensure the management of EE curriculum in schools, since EE is integrated in all school subjects that are regularly monitored as one of the elements of curriculum management. However, EE curricula is thought to be difficult to follow through theoretical tests like the curricula of other subjects. As in my opinion, EE can be evaluated through action initiation that proves the relevancy of teaching and learning of EE curriculum. With action initiation, I meant through developing programmes that are engaging and promotes practical action. This is evident from various studies that were conducted, particularly, with the view to investigate the implementation of EE at school level (Mokhele, 2008; Rahman, 2016; Shabalala, 2019). In a study conducted by Mokhele (2008), and Luna-Krauletz et al., (2021) with a view to integration and implementation of EE, the different authors found that in South Africa and other parts of the world, where EE is implemented, there is no clarity on how EE should be implemented in the formal education system. In support, Damoah and Adu (2020) concluded that the policy has failed to spell out a clear direction on how teachers should integrate EE into their subjects.

Even though prior authors have found that there are challenges with the integration and implementation of EE in schools, literature does not show of any interventions to meet the recommendations made by authors in their studies to address EE implementation and integration related challenges (Damoah & Adu, 2020; Luna-Krauletz et al., 2021; Mokhele, 2008). Therefore, the purpose of the current study is to explore the availability of interventions to manage EE and identify strategies that may contribute to successful distributed leadership in schools to manage EE curriculum.

Theoretical Framework

The current research is grounded on a distributed leadership theory. Using this theory helped to understand how distributed leadership can be used to facilitate the management of EE curriculum in secondary school. Distributed leadership includes activities that are tied to the core work of an organization that are designed by organization members as intended to influence and impact the motivation, knowledge, affect or practices of other organizational members (Cooper, 2012). According to Grenda (2011), distributed leadership theory is an emerging conceptualization that relies on the guidance and direction of multiple human resources. This view of leadership allows the organization to benefit from the combined expertise and joint interaction of school leaders and professional colleagues. Together, this group can work in

concert toward a common goal so that the outcome is greater than the sum of their individual actions (Elmore, 2000; Gronn, 2000; Spillane, 2005).

Spillane (2012) tested and proposed distributive leadership theory as the best leadership approach that schools should use. In the school context, distributed leadership moves beyond the philosophy that leadership emanates solely from the formal position of the principal and instead frames leadership as a practice that involves an array of individuals whose dynamic interactions mobilize and guide teachers in the process of instructional change and learning improvements (Harris, 2005; Spillane, 2005; Timperley, 2005). Distributed leadership does not take the responsibility and authority of leading the school away from the principal (Grenda, 2011). But most importantly, distributed leadership requires the principal to understand the synergistic relationship between leadership and organizational structures, school vision, and school culture. Distribution of leadership by default typically occurs when internal and external stakeholders take the responsibility of leadership functions or routines that are not fulfilled by others within the school community (Cooper, 2012). Therefore, distributed leadership serves as a catalyst to manage EE curriculum at schools as environmental issues cannot be solved by an individual, but everyone has a responsibility to make the environment conducive for future generations.

Problem Statement

The implementation of EE has long been reported to be coupled by challenges that hinder the efficiency of the implementation in the sphere of education (Motshegoa, 2006; Mokhele, 2008). Amongst the challenges mentioned by different authors in all parts of the world, but particularly in South Africa, is the provision of EE in the curriculum; inadequate knowledge about the environment and environmental issues; lack of monitoring of the implementation of workshop process in practice, inability to generate a whole-school approach to active environmental learning; lack support on the part of the school management in respect of the introduction of environmental learning into the curriculum; lack of support materials; lack of support and assistance on the part of teachers in respect of the implementation of EE; funds to with which to purchase learning support materials; lack of information from the curriculum development unit; attitudes of teachers; lack of facilities; time constraint and inappropriate class size (Bacon & Ziepniewski, 2017; Joseph, 2014; Mathenjwa, 2014; Rahman, 2016).

Another challenge that has been mentioned is the issue of teachers being the only role players who are recognized as key agents in the implementation of EE (Del Carmen Conde & Sanchez, 2010; Matshe, 2012). Within the school setting, teachers are the key role players in the implementation of EE. In fact, there are empirical study evidence to suggest that, in many schools in South Africa where EE is implemented, teachers are on their own (i.e., they do not receive support) and they lack resources to support the implementation of EE (Loubser & Simalumba, 2016; Milupi et al., 2022).

Apart from highlighting impediments to EE, some scholars also provided recommendations on how these challenges could be addressed (Mathenjwa, 2014; Ketlhoilwe, 2003). One of the recommendations is that distributed leadership could be used to facilitate curriculum reform, particularly in respect of teaching EE-inclined topics (Avissar et al., 2018). This is attributed to the success of distributed leadership on numerous areas within the sphere of education and is seen as one form of leadership that is prominent in the current education discourse (Shava & Tlou, 2018). Distributed leadership is one of the successful leadership styles in primary and secondary schools as it improves the leadership conditions of the schools (Dampson et al., 2018). For that reason, some scientists are of the view that responsibilities

should be distributed equally to various role players, and no one should be left behind (Dampson et al., 2018; Lumby, 2019).

The benefits of distributed leadership, include inter alia, collaboration amongst staff members for the betterment of the organization (Harris, 2008). Similarly, the organizational commitment has also been identified as a crucial factor in determining and influencing organizational outcomes (Shah, 2012). Based on the successes of distributed leadership, in other parts of the world within the sphere of education (Dampson et al., 2018), distributed leadership can be considered as one of the tools by which EE can be managed. Accordingly, within distributed leadership, school management teams, teachers, parents, and education department officials should strive for a common purpose and, thus, work cooperatively towards the meaningful implementation of EE in South African schools.

The stakeholders' role in EE is to ensure the management of EE curriculum in schools, since EE is integrated in all school subjects that are regularly monitored as one of the elements of curriculum management. However, EE curriculum cannot be monitored through theoretical testing like other subjects' curriculum. In my view, EE can be assessed through action initiation that proves the relevancy of teaching and learning of EE curriculum. This research might help recommend interventions that could help to efficiently facilitate the management of environmental education through distributed leadership. As mentioned in the above paragraph, distributed leadership has a potential to bring positive change in managing the curriculum. However, despite this potential, the literature reviewed for this research suggests that in South Africa, as in other parts of the world, there is paucity of research which focusses on the role of distributed leadership in education, particularly, in the management of EE. Hence, Sibanda (2017, p.577) writes, "there is still a need for more research on distributed leadership in primary and secondary schools in South Africa". This is particularly true in respect of the management of EE because, as previously stated, EE curriculum does not receive as much attention as the other subjects.

Accordingly, this research aimed to explore the strategies for environmental education interventions through distributed leadership in secondary schools in South Africa. The questions to be answered by the current research is: What are the interventions available to manage environmental education curriculum in schools? And What are the strategies that may contribute to the successful distributed leadership in schools to manage EE curriculum? The objectives of this study are: to determine the availability of interventions to manage environmental education curriculum in schools. Another objective is to identify strategies that may contribute to successful distributed leadership in schools to manage EE curriculum.

Method

A research methodology is the specific procedures or techniques used to identify, select, process, and analyses information about a topic. The research model, study group, data collection tools, data analysis, ethical consideration and ethics committee approval processes are discussed in the following sections.

Research Model

This study is part of a larger PhD thesis that the researcher is engaging on to investigate strategies to manage EE curricula through distributed leadership in one of the provinces of KwaZulu-Natal in South Africa. A qualitative study approach was adopted, allowing the researcher to comprehend the issue more deeply (Alase, 2017). Within the scope of qualitative

study, it is essential that the relationships between the methods used in observing, describing, and analyzing various dimensions of daily life are managed by the researcher (Dingwall and Miller, 1997). In this research, which aims to explore the interventions that can be fostered by distributed leadership to manage EE curriculum in schools, the case study model (Yin, 2006), one of the qualitative research methods, was preferred as part of the research to conduct. The case study design was chosen because it makes it easier to provide rich context-based data that is indicative of the respondents' "actual" lives (Thanh & Thanh, 2015).

Study Group-Universe/Sample

A purposeful sample component was utilized to choose the cases for this research (Crossman, 2020). The researcher can access a wide range of variations, formats, and viewpoints on the topic at hand using this method. The demographics of the region where this investigation was conducted served as a guide for the researcher, who employed a set of specified criteria (Patton, 1990), as informed by the demographics of the geographical location of this investigation, to identify the three secondary schools in one district that served as research sites for the current research. The participants consisted of the school stakeholders such as principals, deputy principal, head of departments, teachers and subject advisors as stakeholders who manage the curriculum at a school level. From each school, one school principal, deputy principal/head of departments (HOD), and one Natural sciences teacher in a grade 8 class and two subject advisors from one district were chosen to voluntarily partake in the current research. These participants were chosen because the researcher might get rich data as the participants are responsible for curriculum management.

Data Collection

The data of this study, which aims to explore the strategies for environmental education interventions through distributed leadership in secondary schools in South Africa were collected through a semi-structured interview guide. An interview is an important qualitative research method in which the researcher collects data directly from the participants (Snowkat & Parveen, 2017). Necessary arrangements were made with the school leaders and the semi-structured interview guide was determined as 11 questions. The interviews were held in the teachers' room, in the principal's rooms, in the HODs/deputy principal's rooms and on MS Teams with subject advisors by making an appointment with the participants. The interviews lasted an average of 45 minutes. Voice recordings were taken from the participants who gave permission for the interviews, and the data were recorded in the form of notetaking for those who did not give permission. After the interviews were completed, the audio recordings were transcribed. In order to check the accuracy of the data, the audio recordings were confirmed by an independent researcher.

Data Collection Tool

Semi-structured one-on-one interviews were employed in this research to gather data. These interviews were conducted with three principals, two subject advisors, one deputy principal/two HODs and three teachers. An interview guide was created guided by the research questions that had to be answered. The purpose of the interview guide was to ensure that the interview questions respond to the research questions. Guided by an interview guide was used. The interviews were audio recorded with each respondent's consent. Each responder had the option to have their interview performed in the language of their choice, and the interviews were conducted at the convenience of the participants. Additionally, to increase the data's richness,

numerous documents were shared by the participants to show what is it that they are talking about, such as Annual teaching plans and school's improvement plans.

Data Analyses

Text reduction, coding, categorization, and note of numerous themes or patterns were used to analyses the data thematically (Alhojailan, 2012). As the research progressed, the connections between the themes were discovered through ongoing comparison (Bowen, 2008). Additionally, all audio recordings of interviews were transcribed, and interviews that were conducted in languages other than English were translated. Translations were controlled by doing a forward and back translation to the language spoken by the interviewee to ensure that no meaning was lost. After translations member checking was applied to ensure that the researcher reported the exact words of the participant.

Trustworthiness

To assure three aspects of trustworthiness, namely credibility, dependability, and confirmability of the findings, data, and methodological triangulation as well as an audit trail of raw data, field notes, and data analysis techniques were used (Cohen et al., 2018; Cypress, 2017). The researcher gave a thorough and meaningful account of the research setting and events to facilitate the transferability of findings to other settings.

Ethical Considerations

Each respondent was personally met and interacted with by the researcher before to data collection to fully explain the purpose of the research, study's objectives and secure their agreement to participate. The participants were given the assurances of anonymity and confidentiality; instead, pseudonyms were utilized to identify each participant. Furthermore, it was made clear to the participants that they might withdraw from the study at any time if they choose to do so.

Ethics Committee Approval Process

The ethics application for the study was made on 22/01/2021 and the research was carried out with the approval of the University of South Africa (UNISA) College of Education (CEDU) Research Committee (REC).

Results

Theme: Interventions that have a potentially in promoting the management of EE through distributed leadership

The process of curriculum management involves curriculum development, integration, implementation, and evaluation (The Mansfield Independent School District (MISD, 2019). The management of EE curriculum is importance in the educational sector since EE is an importance element to combat the accelerating deterioration of the environment. This section aimed to explore the strategies available to manage EE curriculum through distributed leadership, if not propose suitable strategies.

What are the interventions available to manage environmental education curriculum in schools?

This section aims to answer the first research questions of whether there are any interventions available to manage EE curriculum in schools. There seems to be no strategies in

place to manage EE curriculum in schools, except strategies to manage the schools. The participant's responses are based on how learners were taught during Covid-19 pandemic, which was irrelevant for this research.

However, participants did share strategies that they believe can assist in facilitating the management of EE curriculum. The diagram below represents the above-mentioned theme and subthemes that are discussed in the following sections.

What are the strategies that may contribute to the successful distributed leadership in schools to manage EE curriculum?

The following section answers the 2nd research question about the possible strategies manage EE curriculum in schools.

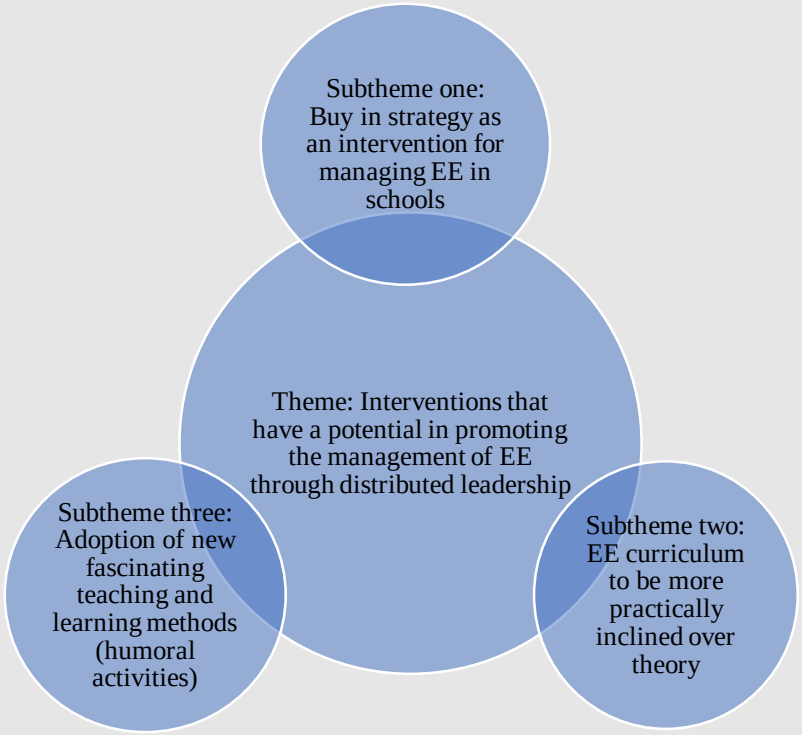

Figure 1: Theme and sub-themes

Subtheme one: Buy in strategy as an intervention for managing EE in schools

Amongst these strategies Mr Mofolo stated that a buy-in strategy can be one of the strategies to manage EE curriculum. In his response, Mr Mofolo mentioned that a leader needs to ensure that his followers buy-in, meaning they approve of the idea.

> *"If you come up with strategies to manage the curriculum and the teachers do not buy it, they will not do it. So, I adopt a buy in strategy…"*

Buy in is a strategy to get leaders, managers, supervisors, peers, colleagues, lobbyists, politicians, and everywhere to get people to agree to do what they want them to do (Clawson, 2007). A buy in strategy is basically a way to make followers do what their leader wants. Buy in is also a strategy to get people to take part and be engaged (Willumse et al., 2018). A buy in

strategy seems to have so much significance in this research, as the adoption of this strategy might help get different stakeholders on board for the management of EE curriculum. Firstly, the implementation of this strategy should start from the National level as they seem to hold more powers when it comes to curriculum decisions and its development.

Subtheme two: EE curriculum to be more practically inclined over theory

Another strategy would be to improve the curriculum of EE to be more practical than theoretical. This way has an advantage to incorporate and motivate creativity and innovation amongst the citizens. It has been reported in prior research that the system of education in place does not set students ready for the job market, but what they are taught are basics that are not applicable in the corporative market. In support, Hansen (2021) reported that, many people have lost their jobs in the United States (US) because the US education system is not held accountable for ensuring that students are equipped with the skills and capabilities to prepare for a career where they can obtain financial stability. In concurrence, Krishnan (2020) mentioned that our education system is losing relevance. Krishnan (2020) further noted that our education system is built on the Industrial Revolution model and focuses on Intelligence Quotient (IQ), memorization and standardization. The responses of participants were in line with the view of Hansen (2021) and Krishnan (2020) when they mentioned that the implementation and management of EE should not only be about teaching environmental topics or making examples that relates to the environment just like it is now happening, but rather to promote practicality to prepare learners for the job market. In his response Mr Mofolo mentioned that,

> *"Yes! it has to be more practical. If I say practical, I do not only mean to be physical practicality used because it is there as prescribed topics…"*

Mr Mofolo further stated that, *"gradual implementation should be there, together with the theory. Application in general, how we apply the content in our daily affairs. For example, a teacher needs to make a student realise how their actions affect all of us..."*

Subtheme three: Adoption of new fascinating teaching and learning methods (humoral activities)

Another strategy would be to involve all stakeholders through teaching EE in a more interesting, fascinating, and creative manner. Making learning fun and more interesting is recommended as it is believed to help keep students focused, involved, interested, and more willing to participate and take risks; retain information better because the process is enjoyable and memorable (Teachers Corner, n.d). From Mrs Sydney's response, it is evident that students from his school take EE as a figure of fun because even them as school leaders or managers, do not see any value in teaching students about the environment. If EE was considered as an important aspect of the curriculum, students would see a need to take it seriously. In his response, Mrs Sydney mentioned that,

> *"We wanted to cater for environmental education last year (2020) as early as March or April, but we were disturbed because we were going to do it for the first time. You know when you are introducing something for the first time, students will simply laugh at you. Let say maybe we clean this river or stream here; students will say why do we clean the rivers? (giggles). You know last year, we made an example by papers, we showed them a river in Japan that was polluted by plastics and papers, students did not understand what is the significance of cleaning the sea, how does that affect us if the whale is dying, there you see they do not understand that this is an environment that we need, we need it since*

there is food in the sea. I, as a principal and teachers were taking this initiation to engage students, but they were not interested because of the environment they grew up on which is not enabling…"

This makes it difficult to manage something that you view as figure of fun and which is convincing that we live in hard times where the state of the environment is devastating, but we find humour in that. However, as a researcher and a teacher, humour can be considered as another way of teaching students about the environment through humour. Which means that such humour should not be a discouragement for school staff to teach environmental education, but it should be used as a strategy to get students involved through introducing exciting activities.

Discussion, Conclusion and Suggestions

In this research, which was conducted with the aim of exploring the interventions that can be fostered by distributed leadership to manage EE curriculum in schools. As mentioned in the preceding section, there seems to be no interventions currently in place for managing EE in secondary schools. It has been determined that participants only explained the strategies that they have used to teach students during Covid-19 pandemic with concepts such as "creating WhatsApp groups to give work to students to do even at homes, not having enough infrastructure and less time given by the Department of Basic Education to complete the syllabus, and others". However, in absence of the strategies in place, participants were able to share strategies that they believe may assist in managing EE curriculum in schools.

The first strategy that was discussed by Mr Mofolo is the Buy In strategy which might ensure that the other school stakeholders buy in to the idea of collaboration and distribution of roles in terms of managing EE curriculum. When the literature was reviewed, Half (2017) confirmed that a buy in strategy in the organization does not just benefit the organization, but collaboration can also increase job satisfaction and lead to better company outcomes. Working in teams allows your staff more opportunities to release their creative ideas and offers a greater sense of belonging (Half, 2017). Therefore, for the purpose of this research, a buy in strategy might emphasize the stakeholders value in the management of EE curriculum.

Another strategy mentioned by the participants was that EE curriculum needs to be more practically inclined over theory. Powers (2004) assert that more practice in the classrooms, through hands-on immersion, prospective teachers can feel and be motivated by the energy and enthusiasm students have for the natural world. Practicality improves participation. Additionally, having a curriculum that is more practically based might require participation from all relevant stakeholders to improve the teaching and learning process.

Lastly, there is a need of adopting new fascinating teaching and learning methods that are humorous in nature. Bakar and Kumar (2019) states that humour serves many roles in teaching and learning. Bakar and Kumar (2019) further states that there is something intriguing and exciting about humour and its use in teaching and learning contexts. In support, Meyer (2000) mentioned that since humour is subjective (different people have different understandings and perceptions of humour) and humour is a receiver-centered communication. Therefore, the use of humour when teaching EE may be considered to attain learners' interest and attention on the environmental topic that is being discussed in the classroom.

The findings of this study point that there are currently no EE interventions in schools. However, as suggested by the findings of the current study, the above strategies might have the potential to serve as interventions for EE. The findings of this study, further reveal that teachers

are viewed as the main catalyst of initiating environmental interventions. However, I argue that other school leaders seem to distance themselves from taking initiative and pass the role to teachers alone. This poses a need for all stakeholders to realize their roles to intervene on EE initiatives as the world cannot be changed by the power of one man. Furthermore, distributed leadership in this case has a significant responsibility to bring school stakeholders to work together through adopting a buy-in strategy where all stakeholders take upon themselves the responsibility of ensuring that EE is relevant to the context of students and their daily interactions. Ensuring that EE content is relevant and beneficial to introduce skills and get students ready for the job market.

The mentioned strategies for environmental education interventions might serve as the building blocks of environmental education curriculum reform and implementation in a comprehensive manner. Again, distributed leadership may serve as a vehicle to allow for this reform as it has a potential of bringing different school stakeholders on board.

This study suggested.

- The adoption of the aforementioned strategies for environmental education intervention.
- Restructuring the curriculum to be practically based, rather than being theoretical.
- Involvement of all stakeholders through decision making where powers are being distributed.

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Declaration

The author declares that this paper is her own personal work emanated from her PhD study.

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