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Effects of Urbanisation on Environmental Learning

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Abstract: *This study investigated the implications of urbanisation on environmental learning in Lusaka city. The study further explored the learning possibilities that could be derived from the current state of built and urbanised environments. With increased urban development, it was not clear how learning in the environment is being achieved. A qualitative design was used to collect data from 30 respondents from primary and secondary schools in Lusaka city. The study showed that most learning environments such as water bodies, open woodlands, grasslands and marshlands have been over taken by built infrastructure; public playing parks have been neglected or turned into economic centres. The study recommends that policy makers and urban planners should prioritize the importance of environmental learning for the benefit of the future generation and promotion of biodiversity.*

Keywords: *Education, Environmental Learning, Lusaka, Urbanisation, Urban development*

1. INTRODUCTION

There is a wide recognition (UN-HABITAT 2016; Government of the Republic of Zambia, 2015; United Nations, 2014) that most regions of the developing world will be highly developed and that the urban population is expected to double by 2050. Zambia and Lusaka in particular, has not been spared from this developmental trend (Ministry of National Development Planning (MNDP), 2017; Velychko 2013). However, this urbanisation has brought about developmental challenges that have impacted the environment negatively (MNDP, 2017) conversely affecting environmental learning.

Environmental learning, happens across a variety of biophysical and sociocultural settings, experiences, and contexts and is thus recognized as being life wide, lifelong or occurring throughout the life course, and life-deep, or influenced by one's culture, values, beliefs, and ideologies (Gould et al. 2019).Environmental learning aids humans to realize the impact of their actions on the natural world, helps promote awareness and responsibility for preserving biodiversity and protecting endangered species as well as their habitats among others. Therefore, if the various spheres of the environment are disturbed, environmental learning may also be affected in one way or the other. With increased urbanization in Lusaka city, it was not clear how learning about, for and in the environment was being affected by the urbanization. Most urban schools are surrounded by artificial environments mostly of built structure and paved pathways. Generally, urban areas have lost natural environments to build infrastructure (Monde, Muchanga and Mweemba, 2023). Such a surrounding pauses challenges to environmental learning. The education of a learner is influenced by a number of things (Monde, 2011) and one of them is the surrounding where the learner is found. According to Fester (2023), exposure to natural world is associated with low levels of stress that one could be going through as well as better overall social and emotional health. The surrounding also influences development or growth of people (Mubita, Milupi, Monde and Simooya 2022). The current situation produces opportunities to create innovative learning activities to enhance environmental learning in urban areas.

The aim of this study was to assess the implication of urbanization on environmental learning in selected schools of Lusaka city. To achieve this, three objectives were set as follows: To investigate the perception of teachers on environmental learning in selected schools in Lusaka city, to establish learners' experiences in environmental learning from selected schools in Lusaka city as well as, to explore the learning possibilities that could be derived from the current state of urbanised

environment in Lusaka city.By investigating the implications of urbanization to environmental learning, the study provided valuable insights that may inform relevant stake holders such as environmental planners, teachers, curriculum developers and policy-makers in Zambia and to add to existing literature on urbanization and environmental learning.

2. Description of Study Area

The study was conducted in Lusaka city. Lusaka city is a centre for most social, political and economic activities in Zambia. In the original plan, Lusaka was meant to be an administrative centre only and did not provide for other economic activities other than government administrative and domestic services (Mulenga, 2003).Additionally, Mulenga (2003) reveals that industrial activities and large populations were not anticipated to be part of the city. Superficially, Lusaka was not intended to be a large city. However, the designation of Lusaka as the capital of Zambia brought about major developmental activities to the city that led to a population sprawl (Wade, 2014). Currently, vast infrastructure such as Banking houses, business office houses, public transport yards, post and telecommunication houses, hotels and other various types of businesses centres were selling and buying of goods take place characterise the city. The city has lately undergone loss of vegetation and increased infrastructure and built environments (Monde, et. al, 2023).

3. Literature Review

Learning, and environmental learning in particular, happens across a variety of biophysical and sociocultural settings, experiences, and contexts and is thus recognized as being lifewide; lifelong or occurring throughout the lifecourse; and life-deep, or influenced by one's culture, values, beliefs, and ideologies (Gould et al. 2019; NRC 2009). Because of these ongoing, mediated aspects, learning processes and outcomes are subsequently and unavoidably influenced by, and in turn influence, values, beliefs, and ideologies (Gould et al. 2019; NRC 2009, 28; Rickinson2006)

According to (Gold et al 2019), environmental learning happens across a variety of biophysical and sociocultural settings, experiences, and contexts and is thus recognized as being life wide, lifelong or occurring throughout the life course, and is influenced by one's culture, values, beliefs, and ideologies. Such social cultural settings include schools where learners spend much of their time shaping their knowledge. As such learning processes and outcomes are influenced and, in turn influence these values, beliefs and ideologies (Rickson 2006). When we consider what it means to learn in everyday life and across the lifecourse, we acknowledge that the potential for learning exists in every moment (Ardoin and Heimlich, 2021). Therefore intentional organization of opportunities such as zoos, historical museums, aquariums and science centres should be facilitated to promote environmental learning (Gould 2019). Harris (2021) confirms that environmental learning activities can also take place within the school grounds. Furthermore, Harris (2021) noted that certain activities such as growing of Trees could be identified as a source of nature at schools, and could take place in playing fields, flower beds or even areas with pot plants or trees. Where there are no green spaces in the school grounds, the activities could take place in parks or other green spaces within walking distance. The study by Harris (2021) found that pupils and teachers were happy, highly engaged, creative and excited to spend more time in nature following these activities. These experiences gave learners something that they could not understand in the classroom setup (Harris, 2021).

Therefore, environmental learning is important because it relates to helping people make meaning across and between life experiences and helping them become aware in everyday life, daily interactions and engagement with the natural and built environments where the potential for learning exists (Ardoin and Heimlich, 2021).

4. Materials and Methods

Qualitative design was used in this study. The target population was all primary and secondary schools in Lusaka city. Convenient sampling was used to sample six schools from which 34 respondents were further conveniently selected. The sample size of 34 was comprised of 22 learners, six administrators and six teachers. Data was collected using semi structured interview schedules, document analysis and analysed based on emerging themes from the findings. The coding of schools was done using initials of the schools as shown in Table 1 on the distribution of the sample size.

Table1. *Distribution of sample size by Schools and respondents*

SN	School	Learners	Teachers	Administrators	Totals
1	HLS	4	1	1	6
2	CCS	3	1	1	5
3	BSS	4	1	1	6
4	DSIS	3	1	1	5
5	RSAS	4	1	1	6
6	MGPS	4	1	1	6
Total		**22**	**6**	**6**	**34**

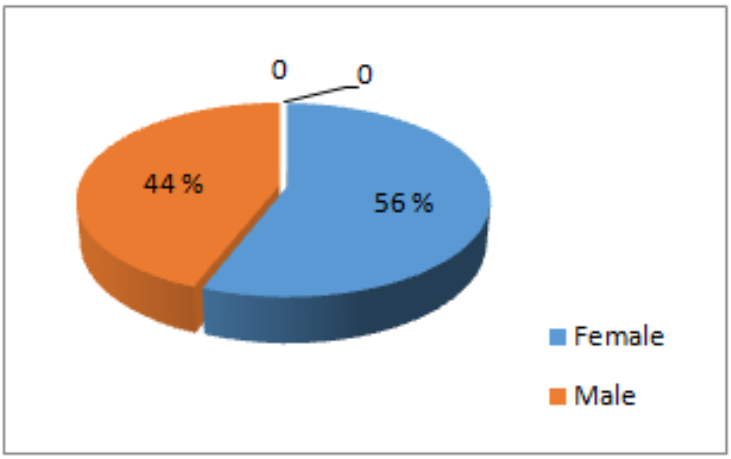

Figure1. *Sample Distribution by Sex*

Out of the 34 respondents, 21 were female giving a 56 % representation while 19 were male giving a 44% representation.

5. Findings and Discussions

The findings are presented based on the themes that emerged from the data that was collected from the selected schools in Lusaka city.

5.1. Understanding of the Term Environmental Learning

When respondents were asked what they understood by the term environmental learning, responses that came through indicated that they had an idea of what environmental learning was all about. Some respondents indicated that *This is where we teach learners how to take care of the environment for example planting trees, sweeping and picking papers" Teacher 2"Learning that deals with the surrounding, both indoor and outdoor because without the life we would not exist"* Teacher 6. From these responses it was clear that environmental learning was understood as an aspect of learning that prepared learners to take care of the environment even outside the classroom situation. Results showed that teachers only viewed the concept of environmental learning as teaching learners on how to care for the environment especially the immediate surroundings. This explanation is limited as it leaves out the aspect of social cultural as defined by some scholars (Gould et al. 2019 and Chipatu). Additionally, Environmental Education standards, environmental learning is a broad concept which is an ongoing process of acquiring new knowledge, understanding and insights about the natural world and the interconnections between human actions and the environment (Chipatu, 2020).From the responses given, the teachers did not fully understand that environmental learning entails introduction of new knowledge and insights into the lives of the learners. This could also be viewed as a weakness where some teachers are not enthusiastic about learning new things, especially related to the environment but rather choose to stick to routine class activities.

5.2. Perception of Environmental Learning in Selected Schools of Lusaka District

Some of the responses that came through on perception of environmental learning are listed in table 2.

Table 2showingPerception of Environmental Learning Among selected schools of Lusaka District

Theme	Response	Respondent
Challenging	*Environmental learning is now a challenge due to lack of plants for demonstration "*	Teacher 4
	"its expensive to take learners out of school to go and have a natural environment that can be attained in the school set up.	*Admin 4*
	The school grounds are limiting the implementation of environmental learning as we are limited to school gardens which is also not very big"	*Admin 1*
	"Most learning environments such as playing parks have been taken up by buildings and shopping malls"	Teacher 5
	" the environment is too artificial"	Teacher 1
Impacts leaners	Sub theme: Positive Impact:	
	"Good impact because we see a change in the behaviour of the learners after we teach them the importance of plants and not littering".	Teacher 1
	"The impact is positive because after we teach them about the environment, they help in keeping the school green and clean".	Teacher 6
	Sub theme: Negative Impact:	
	"There is very little sensitization on environmental sustainability, learners at our school do not know much about the environment and how to preserve it".	Teacher 4
	"The leaners cannot have a real feel of the natural environment in the surrounding areas because most natural environments are cleared"	Teacher 3

Source: *Field Data: 2023*

From the results collected, the perception of teachers that environmental learning is becoming a challenge was clear in the responses. Challenges in environmental learning were also identified by the study by Harris (2021). Responses on challenges faced in environmental learning included loss of natural environments and that the area is becoming artificial. This implied that urbanization had replaced the natural environment and mostly what is surrounding learners are mainly manmade structures. This has consequences on the kind of learning that the learner would get. Instead of seeing a real water body, the learners become content with watching it on Television as was the case with some responses. Roads and buildings have taken up space that was used for learning environmental issues such as plants and insects, complained one teacher. Another teacher that viewed environmental learning as a challenge indicated that *"The culture where the learners come from does not support the information we give them in school concerning the environment for example, when we teach them about not cutting down trees, they say no, we cannot do that because we get charcoal from the trees so we cannot stop".* Teacher 2. A number of factors hinder various environmental activities from being implemented in schools (Monde, 2011) hence affecting environmental learning. Gould et al (2019) also noted that learning processes are unavoidably influenced by beliefs values and ideologies.

However, other respondents indicated that they were doing well in environmental learning. *"Environment learning is very good and has been made easier because we visit places to see animals and some plants that we can't see at school" Leaner 16. "We learn how to keep our environment clean by picking litter" Learner 7. "Sometimes we plant trees, so it is good"* Learner 12.

5.3. Nature of Environmental Learning

When asked "How would you describe the current environmental learning activities at your school"? Some of the learners gave the following responses:

"They are good because the school is green and clean but more can be done to improve the environmental learning activities". Learner 3

"Usually done through activities such as preventive maintenance (PMS), planting trees around the school (usually learners who take Geography and Agriculture Science)". Learner 20

When asked to describe the current environmental learning activities at their schools, some learners said that "they were good" because the school is green and clean but more can be done to improve the environmental learning activities". Further, these results indicate that learners understand environmental learning and that it can be improved by employing other activities such as use of Television and other visual technologies this resonates with Bogusevschi, et, al. (2020) 3D visual learning.

Table3. *Environmental Learning Activities in the selected schools of Lusaka city*

School ground utilization	*"We have preventive maintenance, where we clean the school, plant and take care of flowers and other plants. We also learn how to grow vegetables".* Learner - 2 *"We have activities such as tree planting, and gardening, we also keep chickens and pigs and waste is used as manure for the gardens".* Teacher 6 *"Yes, each class gets portions to grow plants on and make sure they are well taken care of".*–Teacher 5 *"Involvement of everyone in the school in order to continuously improve and on environmental learning".* Teacher 4
Tours and Visuals	*"At times we take them to places such as Mundawanga and kalimba farms where they go and see variety of plants and animals that we do not have within school*." Teacher 3 *"I watch television to learn some of the things that are not in my area. "* Leaner 5
Outdoor environmental learning	"*Through tree planting and recycling*". Teacher 8 "*Through field trips, learners learn more*". Teacher 1 "*Preventive maintenance*". Teacher 5 "*Through Environmental clubs in collaboration with ABSA and other NGO's*". Teacher 9 "*Yes, there is tree planting, productive unit, and gardening*". Teacher 10

Source: *Field Data: 2023*

Results of this study showed limitations in the way environmental learning activities were incorporated in schools. It was mainly learning in the school grounds and taking learners out without much emphasis on social cultural development of the learner and acquisition of new knowledge in those areas.

Results also showed that a lot of teachers use extracurricular activities such as preventive maintenance, tree planting, gardens also confirmed by (Harris, 2021), and environmental clubs in promoting environmental learning by involving learners to participate in cleaning, picking litter and planting trees around the schools as a way of making learners understand the importance of the environment" to promote environmental learning.

5.4. Learning Possibilities

Some of the learning possibilities that came out from the learners included:

- *"We can use school grounds to plant vegetables and grass and learn from there."* learner 15.
- *"We can even learn about rivers on TVs we don't need to see a river"* learner 19
- *"our environments are very safe so we can do many activities that do not need some natural things such as soil"* learner 15

Generally, these findings suggest that both learners and teachers at all grade levels have positive environmental attitudes, and high awareness of environmental issues. It was also mentioned in the findings that some teachers see change in the behavior of the learners towards the environment after such environmental learning. This agrees with Fester (2023) who indicated that exposing learners to nature impacts positively on their academic performance. However it is not known to what extent this change is exhibited. Teachers also indicated that they conducted visits to nearby places such as botanical gardens besides activities within schools. These findings showed that the environmental learning activities in urban schools in Lusaka promote out-door activities that include hands on activities

6. CONCLUSION

This study assessed the implication of urbanization on environmental learning in Lusaka district. The study concludes that urbanization has both positive and negative impacts on environmental learning. From the learners' viewpoint, there is an acknowledgement of ongoing environmental learning activities, although they express the need for improvements. Teachers highlighted positive impacts on learners' attitudes and behaviors towards the environment, although challenges such as limited resources and cultural disparities exist. Administrators emphasize extracurricular activities as means to promote environmental learning. However, they acknowledge resource limitations, particularly in terms of teaching materials and support for teachers. The teachers' perspective unveils diverse definitions and goals of environmental learning, indicating varying levels of understanding and priority. Challenges include cultural conflicts, and resource shortages. Overall, the study underscores the importance of environmental learning in urban schools in Lusaka to include learning through school grounds, preventive maintenance activities, field trips and gardening. While there are positive aspects of integration and impact, there are challenges that hinder the optimal implementation of environmental learning. Learning possibilities include use of school grounds and use of visual aids to implement environmental learning. These findings emphasize the need for focused efforts to enhance provision of necessary resources, and address teacher training for effective environmental learning in the context of urban schools in Lusaka district.

RECOMMENDATIONS

Based on the findings that teachers did not fully understand that environmental learning entails introduction of new knowledge and insights into environmental learning, it is recommended to environmental educators to make deliberate trips to schools and share the correct position of environmental learning through awareness and sensitization programmes. Furthermore environmental learning through awareness can also be achieved though collaboration with various stakeholders such as local environmental organizations, non-governmental organization, government agencies and community members. Based on the finding that learners have to be taken out to learn environmental issues, it is therefore recommended that schools create a repository of environmental learning resources, to support teachers in implementing engaging and effective environmental learning lessons across subjects. These resources could cater for different age groups and learning levels. Collection of indigenous seeds, planting of indigenous trees, creation of environmental learning centers within schools to compliment the outings taken.

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