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Challenges in Teaching Climate Change Education Topics among Peri-Urban Schools in Lusaka, Zambia

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ABSTRACT

The purpose of this study was to investigate the challenges that Civic Education teachers face in teaching Climate Change Education topics in peri-urban schools in the Lusaka District, Zambia. The descriptive survey design was employed in the study which targeted 125 Civic Education Teachers who were purposively sampled. The study used primary data that was collected from the participant and analysed qualitatively through thematic analysis whereas, ranked data was analysed through descriptive statistics, particularly Standard Deviation. The study revealed that, there is inadequate qualified human resources capital to teach Climate Change Education in secondary schools. This is due to a general confusion that the climate change content is a preserve of Geography and not Civic Education or other subjects. Notably, there was lack of updated climate change teaching aids in schools. Further, the study shows the difficulties teachers face to employ learner-centred teaching methods and methodologies. This was attributed to free education policy which contributed to overcrowding of pupils in classrooms thereby raising the ideal teacher-pupil ratio from 1:45, to 1:≤200. Nevertheless, the study recommends that education authorities should encourage Civic Education teachers to attend refresher courses offered through Climate Change Education workshops. This is because, workshops on climate change is where teaching aids and Civic Education content are updated to include information based on the current trends. This broadens the spectrum of Civic Education that would enable learners appreciate the broadness of the subject in terms of how it is linked to Climate Change Education among other environmental issues.

Keywords: Climate Action, Climate Change, Climate Change Education, Civic Education

INTRODUCTION

Effects of the global climate change cut across continents, geographical regions, countries and social services such as education and health (Blewitt, 2008). Muchanga (2020) and Chisanga *et al.* (2022) show that Zambia is undergoing climatic variations as exemplified in the current and projected departure of rainfall and temperatures from their normal levels. Therefore, educators must be involved in promoting behavioural changes for Climate Action (Muchanga & Nkhata, 2023). In the education sector, policies drawn from global agendas such as the Sustainable Development Goals (SDGs) have been developed to encourage member states of the United Nations to adopt education systems that will equip learners with knowledge, values and dispositions meant to promote sustainable lifestyles and development (United Nations, 2015). In order to attain sustainability of the environment for the next generation, it is vital that Climate Change Education becomes the driving force towards the goal.

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Different scholars such as Muchanga and Nakazwe (2015), Kamukwamba and Nachiyunde (2018) and Oversby (2015) conducted comprehensive studies on climate change and Climate Change Education (CCE) and established that Climate Change Education is an indispensable tool that can be used to intervene in anthropogenic activities associated with climate change. The scholar further believed that CCE helps young learners to develop systematic and holistic thinking skills and prepares them to better understand adaptation actions and ability to solve the global climatic crisis. McKeown and Hopkins (2010) argued that climate change could be mitigated in a more sustainable way when communities learn to adapt to it as well as know how to prevent it through practicing environmentally friendly undertakings. Thus, one of the best ways of overcoming climate change challenges in a more sustainable way is through Climate Change Education.

Although climate change issues seems biased towards environmental context, it is an issue and a civic matter that must catch the attention of all civic educators. However, Civic Education teachers in Zambia experience myriad challenges in handling topics related to climate change (Ministry of Education, 2020). This constitutes a problem, which this study sought to address. Studies by Muchanga and Nakazwe (2015) and Kamukwamba and Nachiyunde (2018) on Climate Change Education in Zambia confirmed that very little has been done to raise educational awareness on mitigating climate change issues among learners using the educational approach. This shows that there are challenges in the dissemination of knowledge on climate change in schools. According to the United Nations (2017), failure to address the challenges involved in Climate Change Education may negatively affect the global fight against climate change.

In order to meaningfully deal with challenges of climate change, there should be global concerted efforts to address the climate change crisis and this involves massive educational campaigns. This entails the need to equip schools with adequate resources, both human and financial, to spearhead the campaign against climate change (Williams, 2020). Where there is inadequate expertise and knowledge dissemination on the dangers of climate change, meaningful awareness will not be achieved. Further, providing a local based Climate Change Education initiative is very important as it allows pupils to identify the climate change-related problems affecting their own communities. Therefore, it was necessary to explore challenges experienced Civic Education in teaching Climate Change Education topics from a real classroom context.

Addressing the challenges that teachers face in teaching the topic of climate change should be a concern for all because it is a civic issue. Failure to address challenges faced by Civic Education teachers should be a concern for all humanity, including policy makers, climate change activists as well as state and non-state actors. In the light of this background, this study sought to establish challenges that Civic Education teachers in Lusaka face while teaching the topic of Climate Change Education.

METHODOLOGY

Design

This study employed the descriptive survey design. This design enabled the researchers to collect snapshot perspectives of challenges experienced by teachers of Civic Education in teaching Climate Change Education topics. Vermont (2018) explains that surveys that utilize descriptive sample designs provide broad insight into the subject due to their explorative nature.

Population and Sampling

There are 111 schools in Lusaka District (Ministry of Education, 2020), 10 Peri-urban schools out of the 111 schools were purposively selected. Moreover, the study targeted 125 Civic Education Teachers in the 10 selected schools based on the reason that schools in such areas experience are vulnerable to climate risks such as seasonal flooding due. The 125 Civic Education Educators were selected using purposive sampling given that Civic Education was the carrier subject for Climate Change Education content (Ministry of Education, 2013). Key informants namely, Heads of the Department of Social Sciences; officials from the District Education Board Secretary (DEBS) and Curriculum Development Centre (CDC) were selected using expert purposive sampling. This type of purposive sampling was ideal because it mainly focused on participants who had professional expert knowledge about the subject under investigation (Oliver, 2010). In light of this study, these participants had technical know-how about the effects of climate change in sampled schools hence, their inclusion.

Instruments

The researchers collected data through a semi-structured interview guide. The semi-structured interview guide was a list of questions upon which the researchers conducted interviews with the teachers. The lesson observation guide was a form that included a list of variables that formed the basis upon which to observe the challenges that the teachers of Civic Education experienced when teaching Climate Change Education topics. The collection of data also involved a lesson observation guide, which was prepared in the form of a Likert Scale. Some of the variables in the Likert scale included Class Size, Teacher-Pupil Ratio, Teacher's Clarity in Explaining Climate Change topics, among others.

Trustworthiness and Reliability

In order to ensure that the study was both credible and trustworthy, the researchers employed methodological triangulation where used more than one source of data to receive information from the field was adopted. The study also used member checking to establish the consistency of responses from participants.

Data Analysis

Data management involved the organization, storage, and preservation throughout the research process. The researchers organized the qualitative data into themes with similar meaning. Quantifiable data was organised in tabular matrix of mean scores and standard deviations.

Ethical Considerations

This study adhered to ethical issues in that names of individual participants did not appear anywhere. The researchers used data only for the intended purpose. The researchers observed anonymity and confidentiality. The researchers collected data after obtaining the research clearance from the Social Science Research Ethics Committee of the University of Zambia.

FINDINGS AND DISCUSSION

This section presents results of the study, guided by a specific research question: What Challenges do Civic Education teachers face in teaching Climate Change Education? Based on the participants' responses, the research findings were thematically organized as follows:

Inadequate Human Resource

One of the findings revealed that schools under investigation had limited number of teachers with adequate knowledge and specialization in climate change. For example, at Bauleni combined school there are only 5 teachers of Civic Education against 18 classes for Civic Education and in each class there are 200 learners on average. Another respondent revealed a similar fact to be existing in Kamulanga and Chibolya combined schools where learners have interest in Civic Education, but teachers are few and content inadequacy was clearly seen when teaching on climate change content. As observed by Phiri *et al.* (2022), the teaching of Civic Education should not be taken as a routine phenomenon like any other subject taught in the school system. This implies that lack of adequate social capital in secondary schools of Zambia has made learner relations impossible to achieve namely; between teachers, pupils and among many actors in the education.

Limited Content Knowledge

Another challenge in teaching Climate Change Education was teachers' limited content knowledge. In the responses, there was a general agreement that lack of knowledge about Climate Change Education is a setback toward effective teaching of Climate Change Education. Due to the integrative teaching of Climate Change Education in Zambia, teachers of Civic Education are not expected to have complete knowledge about climate change issues Climate Change Education hence, the lack of sufficient knowledge among teachers. Lack of knowledge is not the only problem, but also the type of knowledge delivered has proven to be a challenge. *Most of the teachers were not even trained around some issue, so you don't expect them to just become perfect in teaching topics that crosscut* (DB1). In order for Climate Change Education to be successful the type of knowledge delivered should be holistic and contextual, and possibly, all teachers in the mainstreams subjects ought to be reinforced by teachers of environmental education to ensure sustainability of peer-to-peer knowledge transfer around Climate Change Education, otherwise, one-off training may not evoke desired results (Muchanga and Nkhata, 2023).

Lack of Teaching and Learning Materials

Lack of climate change teaching and learning materials in primary, secondary schools and tertiary education has hampered the integration of Climate Change Education and this has been caused by poor funding. This lack of adequate training materials at all levels of education inherently suggests that, Climate Change Education is just a by-the-way content and could potentially be ignored so as to create room for examinable content in the curricula, syllabi and text books. Hence, this study strongly disagrees with the popular treatment of Climate Change Education as a crosscutting issue as this severely compromise the quality of content delivered to the learners. Climate change ought be adequately covered in the curricula and syllabi if it is to be adequately reflected in the teaching and learning materials. *Lack of climate change teaching and learning materials in primary, secondary schools and tertiary education has hampered the integration of climate change and this has been triggered by poor funding, so don't expect a teacher to squeeze funds from nowhere to produce these materials for learners, money must first be available, otherwise, only selected aspects can be handled* (CD3).

The Civic Education department does not have adequate teaching and learning materials for all learners. This makes it difficult to adequately teaching Climate Change Education topics in Civic Education (R32). *We are not fully equipped with teaching materials* (R12). *We have more learners than teaching textbooks. So, there is a problem, we need more teaching materials* (R40).

Climate Change Education (CCE) plays a significant role in pushing forward a climate-just transition (UNESCO, 2021). However, this study noted with concern that, school settings

seem to be challenged to equip teachers and, particularly Civic Education teachers with what is necessary for them to become change agents towards Climate Action. The most commonly cited challenge was lack of teaching and learning materials that adequately tackle the subject of climate change in Civic Education. This scenario was the most distressing to most teachers' even those that were trying out their level best to integrate Climate Change Education into the teaching process. In many of the earlier studies cited in the literature review (Bagoly-Simo in Germany, 2023; Muchanga and Nkhata 2023 on the Copperbelt and Luapula Provinces of Zambia; SADC 2022; Ministry of Lands and Natural Resources 2022 in Zambia; Ministry of Education 2013 in Zambia; Nhamo and Shava 2015 in the SADC Region; Afifi *et al.*, 2012 in East Africa; 2015; Lotz-Sisitka, 2010 in Africa),persistent lack of materials that are well-tailored for teachers' use would entirely discourage them from teaching about Climate Change Education within the mainstream subject. The end results would be learners who are not well grounded on this ubiquitous problem of climate change rendering them more vulnerable to projected and actual impact of climate change in the near future (Chisanga *et al.*, 2022).

On the other hand, Climate Change Education is largely tagged as a multi-disciplinary or cross-cutting issue around the world and Zambia in particular. While this may be a good tag, there seem to be some underlying sources of confusion with regard to how the learning materials can be developed to satisfy every mainstream subject or to ensure that the Climate Change Education content is contextually fitting within each subject. This potentially explains why Zambia does not yet have a concrete teacher guide or even pupils' textbook that speaks to the cross-cutting classification of Climate Change Education. Actually, in the Zambian context, Education for Sustainable Development, Environmental Education, and Climate change issues have been recognized as cross-cutting issues in the National School Curriculum Framework, meaning any teacher can talk about them as he or she teaches in her or his main subject area. Nonetheless, since schools lack teaching and learning materials developed to suit crosscutting nature, the teachers especially those whose speciality areas widely vary from CCE might not have the necessary skills, knowledge, and content to handle climate change issues in the classroom. There is need to identify the capacities and capabilities needed to comprehensively integrate climate change issues across the curriculum (Namafe & Muchanga, 2017; Mtonga & Muchanga, 2021). This study strongly hold the view that, Climate Change Education as cross cutting content does not work in school setting and it a sheer waste of time to invest resources in anything that is treated as cross-cutting because in Zambia, crosscutting issues are never taught. If such is the case, we should therefore expect no behavioural change for climate action and mitigation.

Misconceptions of Placement of Climate Change Education

It has been a common perception that climate change should be a concern of Geography and not Civic Education. This creates a cognitive barrier for easy acceptance of the contents of the Climate Change Education lessons in the context of Civic Education.. Some learners wonder why they are learning about climate change in Civic Education. There is a common perception that climate change is a preserve of Geography subject. *As a teacher, it is not easy to clear the misconception that climate change cannot be taught in Civic Education* (R47). *Issues that have to do with Climate change are so sensitive and for people to understand and bring about behavioural change, it has to be frequently taught. Not only this, the attitudes of learners and teachers alike towards the environment changes by consistency, if climate change is not regularly taught to learners, but just rushed through, we would still experience indifferent attitude towards the environment* (CD1).

Usher (2012) says that if trainees are not motivated, it is not possible to improve their academic achievement, however good the teacher, the curriculum or the learning environment is. The study found that unmotivated learners tended to disengage other pupils from the

learning process especially if they noticed that what was being taught to them was already learnt from another subject such as Geography or Environmental Science. It has been observed that when teaching climate change in the context of Civic Education, some learners exhibit low levels of interest. *This proves inhibitive to a successful lesson delivery*, stated one of the participating teachers (R81). Climate change as a topic in Civic Education sounded strange to some learners thereby sparking some misconception and low motivation. This is not to suggest that, leaners did not appreciate the urgency and significance of learning about climate change, but because they perceived the nature of the topic to be geographical. This revelation confirmed earlier observations by Muchanga and Nakazwe (2015), Muchanga and Nkhata (2023) that, what was being claimed to be Climate Change Education was actually just climate change science or climate science, which some learners possibly learnt from other subjects. This also indirectly disputes the claim by MoE (2013) that Climate Change Education is already in all subject as a crosscutting issue, had the subject been crosscut among all subjects, learners would not show low motivation to learn about it from Civic Education context. This goes on to show the need to strengthen teachers' ability to handle the Climate Change Education content and to prepare more materials to help them deliver unique content from the mainstream climate change science.

Inadequate Funding

One of the major challenges faced in promoting teaching of Climate Change Education is lack of funding which could be used to effectively prepare them for the current challenges such as climate change. Many studies acknowledge inadequate funding as one of the main barriers to effective teaching and learning MLNRs 2020; Ahove, 2014; Kronlid, 2009; Martin, Summers & Sjerps-Jones, 2007). Further as observed by Phiri *et al.* (2022) that corruption in the education sector is very likely to occur where teachers receive little or late pay that forces them to look elsewhere for resources no longer provided by their salaries creating a barrier to effective learning in schools. The current study also noted a lack of funding as of the major setbacks to effective teaching of climate change within other subjects such as Civic Education. Notably, the lack of adequate funding has facilitated corruption in the education sector in Zambian school system. As observed by Phiri *et al.* (2022) corruption in the education sector takes various forms affecting education curriculum and content, some of which are not so obvious. It includes the diversion of funds in intended for school content development towards unintended purposes (Phiri *et al.*, 2022).

Literature in the academic community around climate change may be said to have been saturated with scientific research data on the effects, mathematical models, and projections of climate change (Kronlid, 2009) because such research activities have a fair share of funding, especially in developed countries. However, funding remains a challenge to implement Climate Change Education on the ground as was the case in this study. Muchanga and Nkhata (2023) also noted this as one of the most imposing obstacles to Climate Action in schools. No matter what the profession and claims, without funding, materials will not be developed, learning spaces for Climate Change Education cannot be built, and technical capacity cannot be built. UNESCO (2021) notes that it is very difficult to achieve Climate Change Education in learning environments where there are too many competing subjects for limited time and funding. In a study by Kamukwamba and Kabunga (2018), this was one of the major setbacks towards effective teaching of Climate Change Education in schools. Namafe and Muchanga (2017) also noted similar pattern in their critical analysis of the relation of mainstreamed environmental education to the modern schooling system. The current study has so far confirmed that challenges from one subject to the other may only vary to minimal extent. This is premised on the observation that previous studies were biased towards understanding the challenge from a more physical science perspective than from a social science perspective.

Large Classroom Sizes Hinder Learner-Centred Pedagogies

Overcrowding was another noted challenge in the teaching of climate change in civic education. This was mainly compounded by two factors, firstly, introduction of free education and secondly, compulsory nature of Civic Education in school (Ministry of Education, 2020). The study noted with concern that Civic Education classrooms were often crowded because there are a lot of learners who have interest and enthusiasm in the subject. The four schools that were visited all said that the introduction of free education has led to enrolling more pupils than the schools could contain and raising teacher-pupil ration from 1:45 to 1:≤200. This tended to negatively affect how pupils performed in class because there was lack of concentration among the pupils and at the same time, teachers could not really fully give equal attention to every pupil.

A *lot of learners take up Civic Education. Thus, teaching climate change topics in Civic Education proves difficult because classrooms are overcrowded and this make it difficult to provide learner-centred approach to teaching* (R33). *Civic Education classes are often full. This makes teaching difficult, especially with a topic of climate change* (R51). *Employing classroom management techniques is not easy when teaching climate change within civic education. Grasping the attention of the learners when teaching climate change in Civic Education is not easy* (R1).

One male teacher said that "*some pupils sit down and this affects their cognitive concentration leading to high risks of poor concentration and performance*" (R18). The teacher continued by saying that they had to sometimes combine the existing classes into one so as to create room for other newly enrolled pupils. Based on this, teachers were unable to effectively prepare teaching aids and learning materials for a class with over 100 pupils. With the already mentioned shortage of teaching and learning materials, overcrowding would then imply more strain on the already limited learning resources. UNESCO (2021) argues that a school without learning materials would not do an effective job in terms of teaching. The lack of materials in a crowded classroom does not only affect the pupils, but it also affects how the teachers deliver the lessons to their pupils, let alone lessons on topics such as Climate Change Education, which have no materials.

Outdated 2013 Curriculum Framework

The other common challenge has been that, the Zambian school curriculum was too out-dated as it was last revised in 2013 and hence, not up-to-date with substantive climate change topical content by the time this study was conducted.

Our curriculum was last revised in 2013 and Sustainable Development Goals are not included in our curriculum. There is need to update it (R4). *The UN has had several meetings on Climate Change, but latest information is not in our syllabus. There is need to be in line with latest developments on climate change* (R45). *There is no much information on the subject because the curriculum framework has not been attended to in a long time to attend to problems being faced by teacher or educators. There is need for a revised curriculum. This will make it more updated as well as relevant to the current issues* (R13). *There are plans to revise and update the school curriculum.*

A study report Evidence from previous studies shows that there is a lack of latest information on Climate Change Education. For instance, the Ministry of Finance and National Planning (2021) through National Climate Change Learning Strategy notes that the major concern for Zambia is a lack of adequate and updated climate change information in the National Policy on Education, the Curriculum framework. The lack of updated Climate Change Education content in the educational policy and curriculum framework could have led to laxity regarding the teaching of Climate Change Education where teachers would rather not teach Climate Change Education than struggling to figure out the nature of content to be delivered to

the learners and the mode of assessment. Ministry of Land and Natural Resources (2020) further suggests that educators, curriculum developers and education leaders have a role to play in integrating climate change in the pedagogical processes of teaching and learning in formal and non-formal settings. Muchanga and Nkhata (2023) further show that if content does not adequately reflect in the curriculum as was the case for Climate Change Education the 2013 curriculum framework and the syllabi, it is impossible for such content to be adequate in the learning materials hence, the need to revise and intentionally strengthen the Climate Change Education content in the would be curriculum.

Low Learners' Interest in Learning Climate Chance Education through Civic Education

The study found that unmotivated learners tended to disengage other pupils from the learning process especially if they noticed that what was being taught to them was already learnt from another subject such as Geography or Environmental Science

Not all learners in Civic Education exhibit much interest in the subject of climate change (R30). *It has been observed that when teaching climate change in the context of Civic Education, some learners exhibit low levels of interest. This proves inhibitive to a successful lesson delivery. Climate change as a topic in Civic Education sounds strange to some learners* (R29). *Learners often find a hard time cultivating interest in climate change as a topic when it is being taught in Civic Education* (R33).

Usher (2012) says that if trainees are not motivated, it is not possible to improve their academic achievement, however good the teacher, the curriculum or the learning environment is. *It has been observed that when teaching climate change in the context of Civic Education, some learners exhibit low levels of interest. This proves inhibitive to a successful lesson delivery*, stated one of the participating teachers.

Climate change as a topic in Civic Education sounded strange to some learners thereby sparking some misconception and low motivation. This is not to suggest that, leaners did not appreciate the urgency and significance of learning about climate change, but because they perceived the nature of the topic to be geographical. This revelation confirmed earlier observations by Muchanga and Nakazwe (2015), Muchanga and Nkhata (2023) that, what was being claimed to be Climate Change Education in the curriculum was actually just climate change science or climate science, which some learners possibly learnt from other subjects. This also indirectly disputes the claim by MoE (2013) that Climate Change Education is already in all subject as a crosscutting issue, had the subject been crosscut among all subjects, learners would not show low motivation to learn about it from Civic Education context. This goes on to show the need to strengthen teachers' ability to handle the Climate Change Education content and to prepare more materials to help them deliver unique content from the mainstream climate change science.

Lesson Observation Likert Scale

Using a participatory approach, the researcher and the participants ranked the idealness of the environment for teaching of Climate Change Education topics within Civic Education. The ranking was done across 1 to 9 Spectrum with 1 representing the worst scenario of "poor" whereas 9 represented the most ideal scenario of "excellent" as presented in Table 1. The idealness of the environment is a critical factor in achieving a high impact in the teaching and learning process for Climate Action (UNESCO, 2021). The idealness of the learning environments for Climate Change Education was analysed from the context of teacher-pupil ratio, teacher's clarity in explaining climate change topics, teacher's accuracy when explaining Climate Change Education topics, teacher's use of practical examples when teaching climate change topics, learners' ability to comprehend climate change topics through participation, as well as learner's engagement in Climate Actions within the school and in the immediate

surrounding communities. The overall message from the Standard Deviation analysis indicates that, the teaching and learning environment was only about average in terms of its idealness for teaching CCE within the broader frames of Civic Education.

Table 1: Idealness of environment for teaching of Climate Change Education Topics

Variables	Mean	STANDARD DEVIATIONS OF RANKS FROM THE MEANS				
		1 Poor	3 Average	5 Good	7 Very Good	9 Excellent
Class Size	3.2	1.6	**1.0**	2.8	3.0	4.3
Teacher-Pupil Ratio	3.4	1.7	**0.9**	2.9	2.9	4.3
Teacher's Clarity in Explaining Climate Change topics	3.5	1.8	**0.9**	2.9	2.9	4.3
Teacher's accuracy when explaining Climate Change Education topics	3.3	1.6	**1.0**	2.8	2.9	4.3
Teacher's Use of Practical Examples when teaching climate change topics	4	2.1	**0.6**	3.1	2.8	4.4
Learners ability to comprehend Climate Change topics	4.2	2.3	**0.5**	3.2	2.7	4.4
Learners' level of participation	3.6	1.8	**0.8**	3.0	2.9	4.3
Learner's engagement in Climate Actions	3.7	1.9	**0.8**	3.0	2.8	4.4

Notwithstanding the critical importance of these variables in the learning environment, the standard deviation analysis from the mean showed that they were all average. Meaning that the idealness of all the target schools in terms of readiness for teaching Climate Change Education through Civic Education was only average. Even descriptive frequencies confirmed that all responses were predominantly clustered around average, ranging from 67%-88%. These factors entail that teachers were facing various challenges that were making it difficult for them to effectively teach climate change topics in Civic Education. These factors were both teacher-centric as well as learner-centric. While the learner factors include the inability of the learner to understand what was being taught, the teacher factors entailed teachers' inability to explain climate change in the context of Civic Education. According to Mulenga *et al.* (2023), the Zambian education sector has continued to grapple with the challenges of inadequate teachers and hence overcrowded classrooms which compromises the quality of teaching as a learner-centred approach to teaching is compromised. This is particularly so in the aspect of climate change in the Civic Education context. This is contrary to existing claims by MoE (2013), that Climate Change Education is already mainstreamed. Actually, the average presence or complete absence of the above-mentioned variables was among the critical inhibitors of the successful implementation of Climate Change Education as stated by the Ministry of Land and Natural Resources (2020) in its National Climate Change Learning Strategy.

CONCLUSION AND RECOMMENDATIONS

Premised on all the findings, the study concludes that, inadequate human resource can negatively affect the teaching of Climate Change Education topic especially amidst increasing numbers of pupils per teacher. Moreover, the study also concludes that, when teachers of Civic Education lack adequate content knowledge to teach Climate Change Education, they cannot

teach it properly or may entirely skip it from their teaching process, hence their proposal to take it to another related subjects such as geography, which was perceived to be the right preserve of Climate Change Education. The study further concludes that, limited or no funding for integration of Climate Change Education would widely compromise the quality of Climate Change Education content delivery among teachers. Due to limited funds, appropriate teaching and learning resources about Climate Change Education could not be secured and hence, the compromise on the quality of content delivery. The study concluded that, without updated curriculum content on Climate Change Education, teaching about it would equally be compromised. Moreover, learners are unlikely to appreciate and show interest in Climate Change Education content, which they thought could better be learnt through another related subject. Lastly, but certainly not the least, lack of appropriate and ideal teaching and learning environment for Climate Change Education, could according to this study, be a source of demotivation towards integration of Climate Change Education into civic education. Hence, the study recommends the need to train and equip teachers of Civic Education with adequate Climate Change Education content. Additionally, there should be a deliberate broadening of the spectrum of Civic Education to enable learners to appreciate the broadness of the subject and how Civic Education is linked to Climate Change Education. There is also need to increase funding for teaching resources and increasing Continuous Professional Development. Creating an enabling and ideal teaching and learning environment could most certainly boost the enthusiasm of civic educators to teach Climate Change Education through the mainstream subject.

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