

**Okae Edward Oduro Jnr.**

**Environmental Education in the Ashanti Region of  
Ghana [A case study of the Wesley College of Education  
in the Kumasi Metropolitan Assembly, (KMA)]**

Master's thesis in International Education and Development (MIED)

[Second Semester, Spring 2022]



Faculty of Education and International Studies OsloMet  
- Oslo Metropolitan University

### **ACKNOWLEDGEMENTS**

I want to thank the almighty God for helping me to finish this thesis. I was broken many times in my studies, but his power kept me going on. I also want to thank my supervisor Dr Rahul Ranja for stretching out to help me to accomplish this dream; I have learnt a lot from you and will always appreciate you. I also want to thank Prof Hanne, Prof Tom and all lectures that supported us in the seminar section for giving me advice and guidance. I also want to thank all the lectures in the department.

I am also grateful to my colleagues in my year group, for passing a constructive criticism, more particularly Mathias, Prince and Joe. Lastly my appreciation goes to Solomon G. Zaato, Boakye and keysersgata Roommates.

## **DEDICATION**

I dedicate this thesis to my children, Nana Ama Serwaa Oduro Okae, Nana Kofi Poku Oduro Okae and Nana Kwaku Oduro Okae

## ABBREVIATIONS

ADP.....	Accelerated Development Plan
BECE.....	Basic Education Certificate Examination
CPP.....	Conventions Peoples Party
DDT.....	dichlorodiphenyltrichloroethane
DESD.....	Decade of Education for Sustainable Development
EE.....	Environmental Education
ESD.....	Education for Sustainable Development
GES.....	Ghana Education Service
GMoE.....	Ghana Ministry of Education
GSS .....	Ghana Statistical Service
ICT.....	Information and Communications Technology
IUCN.....	International Union for Conservation of Nature
JHS.....	Junior High School
KG.....	Kindergarten
KMA.....	Kumasi Metropolitan Assembly
KNUST.....	Kwame Nkrumah University of Science and Technology
MDGs.....	Millennium development Goals
NaCCA.....	National Council for Curriculum and Assessment
NDC.....	National Democratic Congress
NSD.....	Norwegian Centre for Research Data
NCTE.....	National Council for Tertiary Education
NTC.....	National Teaching Council

NTECF.....	National Teacher Education Curriculum Framework
NLC.....	National Liberation Council
NPP.....	New Patriotic Party
PNDC.....	Provisional National Defence Council
PNP.....	People’s National Party
SDGs.....	Sustainable Development Goals
SMC.....	Supreme Military Council
UDS.....	University for Development Studies
UEW.....	University of Education, Winneba
UG.....	University of Ghana
UCC.....	University of Cape Coast
UGCC.....	United Gold Coast Convention
UN.....	United Nations
UNESCO.....	United Nations Educational, Scientific, and Cultural Organization
UNEP.....	United Environment Programme
UNICEF.....	United Nations Children's Fund
WCE.....	Wesley College of education
WHO.....	World Health Organisation

## **ABSTRACT**

The study investigated environmental education in Wesley College of Education in the Kumasi Metropolitan Assembly (KMA). It covers the main curricular content of environmental education in Wesley College of Education (WCE), the relevance and uniqueness of the environmental education then, to find out the extent to which environmental education is emphasized in the college. Document review was carried out on the curriculum that, the college, junior high schools and primary school used. It entails the environmental education in schools in Ghana. It demonstrates the dripping effect of environmental education to the citizenry and the country at large.

Philosophical foundation was laid to inform the methodological approaches. It used qualitative method and adopted purposively sampling approach to select the participants. Both primary and secondary sources of data were used. The respondents were student teachers and teachers from WCE. The study was guided by three theories that, is critical pedagogy theory, the theory of environmental knowledge and attitude, nature and environmental knowledge and the concept of curriculum.

The main findings of the study reviewed that, environmental education in Ghana is an integrated study which, comprised social studies, general science, geography and many more. The junior high and primary school curriculum showed significant knowledge of environmental education.

The finding also showed that the curriculum assists individuals to explore the environmental challenges and to develop their analytical lenses. The current environment has incurred more effects compared to the past years. Environmental education creates awareness and develops knowledge of the pupils. The study revealed that different teaching approaches are applied in the teaching process of environmental education in the college. The tutors use project methods, presentation methods, and demonstrative methods in the teaching approach. These methods promote the understanding of the course. Students are adequately equipped with resources to facilitate knowledge acquisition. The ultimate aims and significance of the environmental education is to impart knowledge of the green environment to the society.

## Table of Contents

<b>CONTEXTUAL BACKGROUND .....</b>	<b>7</b>
<b>1.0 INTRODUCTION .....</b>	<b>7</b>
<b>1.1 BACKGROUND TO THE STUDY .....</b>	<b>7</b>
<b>1.2 PROMBLEM STATEMENT.....</b>	<b>10</b>
<b>1.2.1 GENERAL RESEARCH QUESTION .....</b>	<b>12</b>
<b>1.2.2 SPECIFIC RESEARCH QUESTIONS .....</b>	<b>12</b>
<b>1.3 SIGNIFICANCE AND AIMS OF THE STUDY.....</b>	<b>12</b>
<b>1.3.1 BRIEF HISTORY AND CURRENT EDUCATION SYSTEM IN GHANA .....</b>	<b>13</b>
<b>1.4 LIMITATIONS OF THE STUDY .....</b>	<b>13</b>
<b>CHAPTER TWO .....</b>	<b>14</b>
<b>THE CONTEXT OF THE STUDY .....</b>	<b>14</b>
<b>2.0 INTRODUCTION .....</b>	<b>14</b>
<b>2.1 THE REPUBLIC OF GHANA .....</b>	<b>14</b>
<b>2.1.1 GEOGRAPHY, CULTURE, AND DEMOGRAPHICS .....</b>	<b>14</b>
<b>2.1.2 HISTORY OF POLITICAL GOVERNANCE IN THE REPUBLIC OF GHANA .....</b>	<b>15</b>
<b>2.2 EDUCATIONAL SYSTEM .....</b>	<b>16</b>
<b>2.2.1 TEACHER COLLEGE OF THE EDUCATION SYSTEM .....</b>	<b>17</b>
<b>2.2.2 ENVIRONMENTAL EDUCATION PROGRAMS .....</b>	<b>17</b>
<b>CHAPTER THREE .....</b>	<b>18</b>
<b>METHODOLOGY OF THE RESEARCH .....</b>	<b>18</b>
<b>3.0 INTRODUCTION .....</b>	<b>18</b>
<b>3.1 PHILOSOPHICAL FOUNDATION .....</b>	<b>18</b>
<b>3.2 TARGET POPULATION .....</b>	<b>20</b>
<b>3.3 STUDY AREAS .....</b>	<b>20</b>
<b>3.4 RESEARCH APPROACH .....</b>	<b>21</b>
<b>3.4.1 SAMPLING AND RESEARCH DESIGN .....</b>	<b>21</b>
<b>3.4.2 DATA COLLECTION METHODS .....</b>	<b>23</b>
<b>3.5 DOCUMENT ANALYSIS .....</b>	<b>23</b>
<b>3.5.1 UNSTRUCTURED OBSERVATION .....</b>	<b>23</b>
<b>3.5.2 SEMI-STRUCTURED INTERVIEWS .....</b>	<b>23</b>
<b>3.6 RELIABILITY AND VALIDITY OF THE STUDY .....</b>	<b>24</b>

<b>3.7 ETHICAL CONSIDERATION .....</b>	<b>24</b>
<b>CHAPTER FOUR .....</b>	<b>26</b>
<b>THEORETICAL FRAMEWORK .....</b>	<b>26</b>
<b>4.0 INTRODUCTION .....</b>	<b>26</b>
<b>4.1 THE THEORY OF ENVIRONMENTAL KNOWLEDGE AND ATTITUDE .....</b>	<b>26</b>
<b>4.1.1 NATURE AND ENVIRONMENTAL KNOWLEDGE .....</b>	<b>27</b>
<b>4.2 THE CURRICULUM .....</b>	<b>28</b>
<b>4.3 CRITICAL PEDAGOGY .....</b>	<b>28</b>
<b>CHAPTER FIVE .....</b>	<b>30</b>
<b>LITERATURE REVIEW .....</b>	<b>30</b>
<b>5.1 BRIEF HISTORY OF ENVIRONMENTAL EDUCATION .....</b>	<b>30</b>
<b>5.1.1 A BRIEF HISTORY OF GHANA`S EDUCATIONAL SYSTEM .....</b>	<b>33</b>
<b>5.2 ENVIRONMENTAL EDUCATION TO EDUCATION FOR SUSTAINABLE DEVELOPMENT .....</b>	<b>34</b>
<b>5.3 THE ENVIRONMENTAL EDUCATION CURRICULUM .....</b>	<b>35</b>
<b>5.3.2 HOLISTIC APPROACH TO ENVIRONMENTAL EDUCATION .....</b>	<b>36</b>
<b>5.4. TECHNOLOGY AND CHALLENGES ABOUT ENVIRONMENTAL EDUCATION .....</b>	<b>39</b>
<b>CHAPTER SIX .....</b>	<b>41</b>
<b>PRESENTATION AND DISCUSSION OF FINDINGS .....</b>	<b>41</b>
<b>6.0 INTRODUCTION .....</b>	<b>41</b>
<b>6.1 DOCUMENT STUDIES .....</b>	<b>41</b>
<b>6.2 PRESENTATION OF ENVIRONMENTAL EDUCATION CURRICULUM .....</b>	<b>42</b>
<b>6.3 A DOCUMENT STUDY: PRESENTATION OF OBJECTIVES AND CONTENT.....</b>	<b>43</b>
<b>6.3.1 DISCUSSIONS OF THE ENVIRONMENTAL SCIENCE CURRICULUM OBJECTIVES AND CONTENTS .....</b>	<b>44</b>
<b>6.4 INTEGRATION OF ENVIRONMENTAL EDUCATION IN SCIENCE TEACHING .....</b>	<b>45</b>
<b>6.4.1 DISCUSSIONS ON INTEGRATION OF ENVIRONMENTAL EDUCATION IN SCIENCE TEACHING .....</b>	<b>45</b>
<b>6.5 ASSESSMENT OF COURSE IN SCIENCE WITH ENVIRONMENTAL EDUCATION ..</b>	<b>47</b>
<b>6.5.1 DISCUSSION ON ASSESSMENT OF COURSE IN SCIENCE WITH ENVIRONMENTAL EDUCATION .....</b>	<b>47</b>
<b>6.6 PRESENTATION OF INDEQUATE INSTRUCTIONAL TIME FOR TEACHING .....</b>	<b>49</b>
<b>6.6.1 DISCUSSION OF INADEQUATE INSTRUCTIONAL TIME FOR TEACHING .....</b>	<b>49</b>
<b>6.7 PRESENTATION OF TEACHING METHODS .....</b>	<b>49</b>
<b>6.7.1 DISCUSSIONS OF TEACHING METHOD .....</b>	<b>49</b>
<b>6.7.2 PRESENTATION OF PEDAGOGIC KNOWLEDGE .....</b>	<b>50</b>
<b>6.7.3 DISCUSSION OF PEDAGOGIC KNOWLEDGE .....</b>	<b>50</b>



<b>6.7.4 PRESENTATION OF SUPPORTED TEACHING IN THE SCHOOLS.....</b>	<b>51</b>
<b>6.7.5 DISCUSSION ON PRESENTATION OF SUPPORTED TEACHING IN THE SCHOOLS .....</b>	<b>52</b>
<b>6.7.6 OTHERS LIKE LITERACY STUDIES. GHANAIAI LANGUAGE AND ENGLISH ....</b>	<b>52</b>
<b>6.7.7 DISCUSSION OF LITERACY STUDIES, GHANAIAI LANGUAGE .....</b>	<b>52</b>
<b>6.7.8 CONCLUSION .....</b>	<b>53</b>
<b>6.8 WHY THE NEW CURRICULUM .....</b>	<b>53</b>
<b>6.9 INTRODUCTION / THE KG CURRICULUM / STRUCTURE / CONTENT / OBJECTIVE / INDICATION / INDICATOR AND EXEMPLARS.....</b>	<b>54</b>
<b>6.9.1 DISCUSSION .....</b>	<b>54</b>
<b>6.10 THE CURRICULUM OF JUNIOR HIGH SCHOOL (JHS) .....</b>	<b>54</b>
<b>DISCUSSIONS .....</b>	<b>55</b>
<b>CHAPTER SEVEN .....</b>	<b>56</b>
<b>PRESENTATION OF FINDINGS .....</b>	<b>57</b>
<b>7.0 INTRODUCTION .....</b>	<b>57</b>
<b>7.1.0 THE MAIN CONTENT OF ENVIRONMENTAL EDUCATION IN WESLEY COLLEGE OF EDUCATION-MAIN THEME .....</b>	<b>57</b>
<b>7.1.1 THE CURRICULUM OF YOUR ENVIRONMENTAL EDUCATION .....</b>	<b>57</b>
<b>7.1.2 HOW RELEVANT IS THE CONTENT OF ENVIRONMENTAL EDUCATION OF YOUR CURRICULUM TO YOUR COUNTRY AND LOCAL COMMUNITY? .....</b>	<b>58</b>
<b>7.1.3 WHAT DO YOU THINK COULD BE DONE TO HELP ACHIEVE THE GOALS AND OBJECTIVES OF THE COURSE, ENVIRONMENTAL EDUCATION AS WELL AS THE CURRICULUM? .....</b>	<b>58</b>
<b>7.1.4 WHAT DOES THE ENVIRONMENTAL EDUCATION MEAN TO YOU? .....</b>	<b>59</b>
<b>7.1.5 WHAT IS ENVIRONMENTAL EDUCATION AND HOW IMPORTANT IS IT? .....</b>	<b>59</b>
<b>7.1.6 WHAT TEACHING METHODS IS EMPLOYED IN TEACHING ENVIRONMENTAL EDUCATION .....</b>	<b>60</b>
<b>7.2. THE RELEVANCE AND UNIQUENESS OF THE ENVIRONMENTAL EDUCATION IN WESLEY COLLEGE OF EDUCATION-MAIN THEME .....</b>	<b>60</b>
<b>7.2.1 HOW DO TUTORS PREPARE YOU AS A STUDENT TEACHER TO TEACH ENVIRONMENTAL EDUCATION AT YOUR JUNIOR AND SENIOR HIGH SCHOOL? ..</b>	<b>61</b>
<b>7.2.2 HOW RELEVANT ARE THE METHODS USED TO TEACH ENVIRONMENTAL EDUCATION? .....</b>	<b>61</b>
<b>7.2.3 HOW CAN STUDENTS BE ADEQUATELY RESOURCED TO APPROPRIATE TEACHING METHODS IN ENVIRONMENTAL EDUCATION IN THE TEACHING AND LEARNING PROCESS? .....</b>	<b>62</b>
<b>7.3. THE EXTENT TO WHICH ENVIRONMENTAL EDUCATION IS EMPHASIZED IN THE COLLEGE OF EDUCATION .....</b>	<b>62</b>
<b>7.3.1 WHAT ARE THE AIMS OF THE PROGRAM OF ENVIRONMENTAL EDUCATION IN THIS COLLEGE? .....</b>	<b>63</b>

<b>7.3.2 HOW MANY PERIODS OR COURSE HOURS ARE ALLOCATED TO THIS PROGRAM? EXPLAIN WITH REASONS? .....</b>	<b>63</b>
<b>7.3.3 WHAT ARE THE MODES OF ASSESSMENT OF YOUR ENVIRONMENTAL EDUCATION PROGRAM? .....</b>	<b>64</b>
<b>7.3.4 DO YOU THINK YOU HAVE IDENTIFIED SOME MODIFICATIONS IN THE CURRICULUM, IF YES WHAT IS YOUR PERSPECTIVE ABOUT THAT? .....</b>	<b>64</b>
<b>7.3.5 WHAT TEACHING STRATEGIES OR IMPROVEMENT MATERIALS ARE USED TO EMPHASIZE THE TEACHING OF THE ENVIRONMENTAL EDUCATION SUBJECT? ...</b>	<b>65</b>
<b>7.3.6 ARE YOUR ENVIRONMENTAL EDUCATION AND AWEARNESS CREATION CLOSELY TIED TO BROADER ENVIRONMENTAL ISSUES? .....</b>	<b>66</b>
<b>CHAPTER EIGHT .....</b>	<b>68</b>
<b>DISCUSSION, CONCLUSION, AND RECOMMENDATIONS .....</b>	<b>68</b>
<b>8.0 INTRODUCTION .....</b>	<b>68</b>
<b>8.1 THE PERSPECTIVE OF THE SIGNIFICANCE OF THE CONTENT AND THE EXTENT TO WHICH ENVIRONMENTAL EDUCATION IS EMPHASIZED- MAIN THEME 1 .....</b>	<b>68</b>
<b>8.2 THE SIGNIFICANCE OF TEACHING METHODS IN THE ACHIEVEMENT OF ENVIRONMENTAL EDUCATION, AIMS AND OBJECTIVES .....</b>	<b>73</b>
<b>8.3 THE RELEVANCE AND UNIQUENESS OF THE ENVIRONMENTAL EDUCATION IN WESLEY COLLEGE OF EDUCATION .....</b>	<b>76</b>
<b>8.4 THE EXTENT TO WHICH ENVIRONMENTAL EDUCATION IS EMPHASIZED IN THE WESLEY COLLEGE OF EDUCATION .....</b>	<b>78</b>
<b>8.5 CURRICULUM .....</b>	<b>82</b>
<b>8.5.1 CONCLUSION .....</b>	<b>83</b>
<b>8.6 RECOMMENDATIONS .....</b>	<b>84</b>
<b>8.6.1 RECOMMENDATIONS FOR ACTION BY GOVERNMENT .....</b>	<b>84</b>
<b>8.6.2 RECOMMENDATIONS FOR ACTION BY COLLEGE MANAGEMENT .....</b>	<b>84</b>
<b>8.6.3 RECOMMENDATIONS FOR FURTHER RESEARCH .....</b>	<b>85</b>
<b>8.6.4 RECOMMENDATION FOR ACTION IN ENVIRONMENTAL EDUCATION .....</b>	<b>85</b>
<b>REFERENCES .....</b>	<b>87</b>

**LIST OF FIGURES**

Figure 1: Figure showing the study area and its region .....22

**LIST OF APPENDICES**

APPENDIX I ..... CONSENT FORM

APPENDIX II ..... INTRODUCTORY LETTER

APPENDIX III ..... SIGNED CONTRACT

APPENDIX IV ..... INFORMATION LETTER

## **CHAPTER ONE**

### **CONTEXTUAL BACKGROUND**

#### **1.0 INTRODUCTION**

Environmental education is crucial for the sustainability of our biosphere. The teaching of environmental education has become especially important to policymakers across the globe. Hence, an adequate preparation for the implementation by teachers' colleges is required. There are multiple challenges embedded in environmental education which will be discussed later. This study explored the extent of environmental education with emphasis on Wesley College of Education, the content coverage of environmental education, and how relevant and unique environmental education is covered in Wesley College of Education.

This chapter's research topic is Environmental Education in the Ashanti Region of Ghana: A Case Study of the Wesley College of Education in the Kumasi Metropolitan Assembly. It also gives readers background information on the study's investigation of issues pertaining to environmental education. There is also a brief history of Ghana's educational system and information about the environmental education programme at the College of Education. The problem statement, sub-questions, study objectives, and defined research questions were covered in this chapter. Finally, this chapter addressed the importance's and purposes of the study, illustrates how environmental education should be taught to grab student teachers' attention, and defines a few key concepts to make the thesis' organisational structure clear to readers.

#### **1.1 Background to the Study**

As a cornerstone and bedrock of development, education has been of immense importance and of high relevance around the world in fostering socio-economic pursuits, with Ghana being no exception (Abiogu, 2014). The importance of education in our daily lives as humans cannot be underestimated. Babarinde and Farayola (2005) highlight that development involves an increase in the quantity and quality of life of a person. Undoubtedly, it is only education that can help to improve humans in both quantities and qualities of life.

Ogundowole (2004) also affirms that for development to be achieved there is the need for selfrealization and that one prominent key to that, is education. The author further illustrates that an individual's self-realization becomes reflective to others. Also, that individual who through education have become self-realized reciprocate that to the environment. Selfrealization is understanding one's true self, which is distinct from the mental chaos that

improves us in our everyday life. It is realizing our full potential that everything we want and need already lies within us (Ogundowole, 2004). Education serves as a panacea for reaching the sustainable development goals. Gro Harlem Brundtland commission of the United Nations defines sustainability as “meeting one’s needs without compromising the ability of future generations to meet their own needs” (Brundtland, 1987). Darkwa (2016), indicates that “education that is geared towards achieving sustainable development must be continuously upheld”. Unavoidably, sustainability has frequently focused primarily on the environment and economics, ignoring other factors like institutional sustainability. At the local, national, and international levels, institutional sustainability guarantees that WASH (water, sanitation, and hygiene) systems, institutions, policies, and procedures are operational to achieve their desired goals (Mensah, 2019). It shows that institutional sustainability to succeed there is the need for synergies between all quarters to help bring about sustainability. To realign education for environmental sustainability, the United Nations announced the decade of education for sustainable development (ESD) between 2005 and 2014. This includes sustainable development and environmental education into all educational systems, strategies, and public awareness programs as reported by Darkwa (2016). Darkwa (2016) argues that education must be made “climate compatible and linked to sustainable development to meet the needs such as urbanization, industrialization, and protecting the environment against the increasing population in this 21<sup>st</sup> century”. Brundtland Commission suggests, “Sustainable development demands that whilst efforts are being made to meet the needs of the current generation, enough must be done to ensure that the needs of future generations are not compromised” (Darkwa, 2016). The UN's Earth Summit, which was held in Rio de Janeiro, Brazil in 1992, was made possible by the Commission's report. This conference's Agenda 21 plainly states that it is a nonbinding plan that came out of the United Nations' Earth Summit. An all-encompassing plan of action for the environment was declared (Darkwa, 2016).

There is therefore the need to underscore the immense importance of education in protecting the environment. Encarta defines, “Education” as the process by which a society hands down its knowledge, culture, and values from generation to generation as cited by (Adu-Agyem & Osei-Poku, 2012). Education supplies holistic development of an individual. This aims at developing the cognitive, psychological, and affective behaviours of human development from the pre-school level through to the tertiary level of education. This acquired knowledge empowers us to take better care of the environment. This enables pupils/ students to think widely, “act with their hands and feel with their hearts” (Adu-Agyem & Osei-Poku, 2012).

They further state that education is the process by which the mind develops through learning at school, college, or university. Additionally, one gains knowledge, competences and skills when he or she is taught through education (Adu-Agyem & Osei-Poku, 2012).

Our environment needs to be transformed through the process of educating the citizens on the essence of cutting down on emissions by reducing pollution within the planetary boundaries in our ecosystem (Chakrabarty, 2017). In "*The Climate of History: Four Theses*," Chakrabarty (2017) makes the case that anthropogenic climate change has signalled a fundamental shift in human history and capacity. After accepting the scientific evidence that human activities are altering the earth's atmospheric patterns and geochemical cycles, he argues that we should take action. Hence, the need for humanity to take dramatic measures to reverse this situation. Chakrabarty (2017) further goes on to add that education is one of the keys that can contribute to the change of this current situation. As cited by Fischer *et al.*, (2012), humanity has never been moving faster and afar from sustainability than now. This recalls an obvious paradox as affirmed by Asare *et al.*, (2015) that reduction in environmental quality keeps increasing after four decades of international environmental governance, typically, at a time where the discourses on the 'green', the 'ecological' and the 'sustainable' have become common notions in our daily lives (Pp. 385-395). According to (IUCN, 2014), environmental governance is the decision-making process involved in the management and control of the environment and natural resources. IUCN (2014) further indicated that there are many actors to its implementation at various levels such as local, national as well as international. Some of its actors include the market, civil society, and the state. Moreover, the interaction of such actors helps to formulate and enact policies that are implemented in schools. The IUCN report adds that Environmental education is indeed essential to supplying the right tools, knowledge, and expertise required to address the challenge of our declining environmental quality.

There are different perspectives on how to raise the standard of the educational system. While most authors share concerns about improving the quality of education, they differ hugely on how to achieve this. Barrett (2006) indicates that quality education is the fair and standard education for all that will promote lifelong learning. Therefore, the urge to get knowledge and that quality, in this case, is defined in terms of efficiency, value for money, and meeting the demands of educational consumers. Some available literature argues the case for a new set of global learning tests which have been designed to drive a revolution in the quality of teaching and learning. On the contrary, others appear to focus on the weaknesses of existing international testing regimes. Furthermore, others regard the recent attention to both quality learning and

teachings in recent Global Monitoring Reports but advance a powerful critique of the conceptual weaknesses of the approach (McGrath & Gu, 2016). These approaches all have the common aim of raising the standard of education. Subsequently, the aim of environmental protection is emphasized in environmental education. This study therefore looks to underscore the quality of the content of educational modules within students' curricula particularly in an institution of higher learning in Ghana as well as their effectiveness concerning the protection of our environment.

## **1.2 Problem Statement**

As an emerging economy, Ghana appears to be battling with many environmental challenges despite the enactment and formulation of numerous environmental laws to curtail environmental problems (Agbenyega & Tamakloe, 2021). Paramount issue among the environmental challenges can be attributed to improper waste management disposal. These include solids such as plastics and liquid waste, deforestation, forest and land degradation because of bush burning, air pollution, and water pollution that affect human health. Recently the country has been faced with devastating environmental impacts because of illicit smallscale gold mining (GALAMSEY) activities which is becoming increasingly unmanageable, destroying farmlands, forest, and water bodies (Hilson,2001). The President of Ghana, Nana Addo-Danquah Akufo Addo upon assumption of power in 2017, has in many instances reiterated that the environment is all that Ghana has and called for consented efforts of every Ghanaian to help protect it for posterity. This requires the formation and strengthening of institutions of state including educational institutions, traditional leaders, and every citizen to manage and protect the environment. This motive of the president towards keeping and protecting the environment is in line with the sustainable development goals. The motives of both current and past presidents of Ghana draw on the premise that every Ghanaian needs to get involved in solving the environmental challenges. These challenges can be duly resolved through environmental education. Most past studies by other researchers like Dorm-Adzobu (2010) in his paper on National Environmental Policy and Atuguba (2019) spoke about Environmental Education in Colleges of Education in Ghana. They indicate that environmental protection or education has focused on a sectorial or institutional levels without the active involvement of key stakeholders of the society. Hence the need to use teachers or teacher trainees as respondents for this study. The teacher's role in promoting education is not and should not only be limited to training people to be filled with knowledge. However, teachers are also people who can set the pace for others in terms of protecting the environment to ensure



sustainable development. Subsequently, the government of Ghana was then convinced to incorporate environmental education in the educational curriculum of training colleges.

Environmental Education (EE) integration into primary and secondary schools was given top priority in the 2007 educational reform by the Ghana education review committee in 2002 (GMoE, 2007). The intended transformation by individuals to demonstrate ecologically sensitive and friendly behaviours has not yet been reached, despite sustainability appearing in practically every environmental problem and occasionally political discourse in Ghana. To prepare citizens who are environmentally literate and competent of actively solving environmental concerns, environmental education has been introduced into Ghanaian schools and, consequently, to the institutions of education (Stapp et al, 1969, Roth, 1992, Coyle, 2005). When individuals are aware of environmental hazards and are well-equipped to cope with them, a path has been opened up to aid in solving the issues that the environment faces.

The involvement of schoolteachers in promoting environmental education is therefore considered a multi-disciplinary approach since the work of teachers touches both present and future lives (Tilbury, 1992). Despite the vital role of the teachers in terms of creating environmental awareness and action-driven citizens, there is little research on the role of the teacher in achieving this goal as most prior studies have neglected the involvement of the teacher. Teachers by their training are posted to the remotest parts of the country wherever their services are needed. A trained teacher who is also environmentally literate and practices what he or she teaches will be able to affect the young learners to become more environmentally educated and strive to attain environmental sustainability (Ramadhan et al, 2019). To tackle these global environmental challenges, particularly in Ghana, teachers play a significant role to train people. These trained persons will be able to find solutions to the growing problems of the environment. This can particularly be done when the teacher who is at the centre of the total upbringing of children is actively involved. The most effective and instructional period in the life of individual students is at the primary and secondary levels of education which ranges from 6 to 14 years. This is the most impressionable age that has the power to bring about the desired transformation. The educators who instruct at various levels are in charge of doing this. This is because effective learning happens in childhood. To make environmental education effective the people who shoulder this responsibility need to be trained. For the students being integral members of the country's human resources, hence the rationale for teacher educators to train these individuals to think, analyse and act judiciously. Wesley College of Education (WCE) which is a centre of education trains both primary and junior high teachers to help

implement curriculum guidelines under the environmental policies of the government to curb the challenges related to the environment. Although there has been much research undertaken in environmental education across the globe, the case of Ghana is negligible and Wesley College of Education (WCE) has not had a study on it yet since the affiliation of the Colleges to the Universities. Atuguba (2019) researched environmental education in colleges in Ghana and delved into the number of colleges undertaking environmental education. Other literature sources from Darkwa (2016), Adom (2019), and Lawson *et al.*, (2015) have also talked about the local knowledge of environmental sustainability, sustainable development tools, and sustainable development strategies. It is therefore imperative that a study about environmental education about colleges be conducted. This will also serve as a way of appraising the environmental education program introduced by the Ghana Education Service at the Wesley College of Education within the Kumasi metropolis. This research therefore looks to find out more about the content structures of the curriculum and other modes by which the content is taught.

To achieve the broad aim of this study on environmental education in the Ashanti region of Ghana, within the Kumasi metropolis, therefore this study seeks to find answers to the following research questions.

### ***1.2.1 General Research Question***

How is Wesley College of Education teaching environmental programs, and what is its relevance in shaping the desired attitudinal changes in students and its repercussion to its Ghanaian Society?

### ***1.2.2 Specific Research Questions***

1. What is the extent to which environmental education is implemented in Wesley College of Education?
2. What is the main content of environmental education in Wesley College?
3. How relevant and unique is environmental education?
4. What are some of the activities implemented by the environmental education department in Wesley College?
5. Do the policy documents by the government under the ministry of education reflect their commitment to environmental education?

## **1.3 Significance and Aims of the Study**

This study focused on knowing the significance of teaching environmental education to students in the Wesley College of Education. It will also be of enormous benefit to individuals

who are trying to develop environmental programs in schools. It will further aid teachers in their instructional contacts to keep abreast of the situational events. This study will again enable the researcher to learn from the experiences of other educators as well as overcome some of the barriers that limit such learning.

### ***1.3.1 Brief History and Current Education System in Ghana***

Ghana was referred to as the Gold Coast during the colonial era. The country is endowed with a lot of educational institutions with the premier university being the University of Ghana. While the Presbyterian Training College is the first teacher college of education in Ghana which was set up in the year 1846. The Wesley College of Education was also set up in 1924 (Atuguba, 2019; Nyarkoh, 2016). Ghana's educational system is considered a model to many sub-Saharan African (Little, 2010). From elementary school through graduate school, English is the official language of instruction.

Three levels make up Ghana's educational structure. Kindergarten, elementary school, junior high school, senior high school, technical and vocational education, and tertiary level comprise the basic education system (Universities, Polytechnics, and Colleges). Education is compulsory and free for citizens from the age of 4 up to 15 years that is from the primary to the senior high school level. Environmental education is taught from the basic to the tertiary level with some major areas in the tertiary level.

### **1.4 Limitations of the Study**

This research will corroborate the findings appropriately if it was carried across all the colleges of education that offer environmental studies in their program in the Ashanti Region and Ghana as a whole. However, due to time constraint the research was conducted only in one institution known as Wesley College of Education. This is situated in the Ashanti region of Ghana. The study is to explore how environmental education is taught and practiced in the College.

However due to the impact of Covid 19 pandemic there were some restrictions at the institution.

## **CHAPTER TWO**

### **THE CONTEXT OF THE STUDY**

#### **2.0 INTRODUCTION**

Significantly, every thesis is set in a context that is both in time and place. This is because it puts the study in the right perspective and thereby engages the reader to understand the context to heighten their reading interest. Hence the study is set in Ghana both in historical and contemporary contexts. This chapter talks about the republic of Ghana, geography, culture, and demographics, history of political governance in the republic of Ghana, educational system, Teacher College of Education system and environmental education programs.

#### **2.1 The Republic of Ghana**

The Republic of Ghana has been a British colony for about 56 years. Before independence, Ghana was called the Gold Coast. The country was named “Ghana” from the old Ghana Empire which means the ‘warrior king’. On 6<sup>th</sup> March 1957, the country gained independence and became a republic on 1<sup>st</sup> July 1960 (Dickson, 1969).

##### ***2.1.1 Geography, Culture, and Demographics***

The country Ghana is found in the western part of Africa and surrounded by three (3) francophone countries. “To the north is Burkina Faso, to the south is the Gulf of Guinea, to the east is Togo and to the west is La Cote d’Ivoire” (Briggs & Connolly, 2016). About 31 million people call this country home. Its 238,538 square kilometres of land are populated by people who are conspicuously young and in good health (Ghana statistical service, 2021). The capital of the nation is Greater Accra, which is organised administratively into 16 regions with 261 municipals, metropolitan, and district assemblies.

We have the Greenwich Meridian passing through Tema which is the industrial hub of the country found in the Greater Accra region. The country is in the equatorial region of the world (Briggs & Connolly, 2016). There are lots of mountains in the country as well. Prominent among them is the mountain Afadjato in the Volta region of Ghana. There are many rivers across the country with some of these rivers being the lake Bosomtwi, lake Volta, the White and the Black Volta that cut across from the Volta region to the savannah region. There are numerous types of forests, including wet semi-deciduous forests, evergreen rainforests, and evergreen moist forests. Many agricultural lands cut across the country and many mineral

resources such as gold, diamond and bauxite with the country also blessed with the discovery and exploration of oil in large commercial quantities.

The country is diverse and is made up of many ethnic groups, with dominant ethnic groups such as the Akans (consisting of the Asantes, the Bonos, the Fantis, the Akyems), the mole Dagombas, the Guans, the Gas, etc. The life expectancy in the country is currently pegged at 60 years (Ghana Statistical Service, 2021; Nugent, 2020).

### ***2.1.2 History of Political Governance in the Republic of Ghana***

The Convention People's Party (CPP) was the first political party to rule the country after independence. It broke away from elites of the state when they were advocating for independence which had formed a political party known as the United Gold Coast Convention (UGCC). The first president was Kwame Nkrumah who had formed a political party known as the Convention People's Party (CPP). The party CPP had advocated for independence now, and this contrasted with advocacies by the United Gold Coast Convention requesting for independence in the nearest possible time when systems were put in place. On 24<sup>th</sup> February 1966, a military junta was overthrown by the National Liberation Council (NLC) which took power from the

Convention People's Party (CPP) (Driscoll, 2020; Mazrui, 2003). The National Liberation Council paved way for an election to be organized to which the Progress Party (PP) won which further paved way for Kofi Abrafi Busia to be enacted into power which lasted for a brief period. The National Redemption Council (NRC) took over the country on the 13th January 1972 which later metamorphosed to become what was known as the Supreme Military Council (SMC). On the eve of 15th July 1978, a palace coup was organized by senior military officers within the SMC forming SMC II to govern the country (Adu-Amankwaah, 2008), (Al-Hassan, 2004). On June 4th, 1979, junior officers of the Ghana armed forces led by their leader Jerry John Rawlings took overpower from the SMCII government. In about 112 days in power, the Armed Forces Revolutionary Council (AFRC) organized an election which finally ushered in the People's National Party (PNP) through an election in the year September 1979 led by Hilla Liman (Al-Hassan, 2004). This party could not also last much in power as the AFRC which had metamorphosed into what was called Provisional National Defence Council (PNDC) came back to topple PNP in the year December 1981. The PNDC, which was a military government, ruled for eleven years before the democratic transition occurred. This time the PNDC had changed to form what was called the National Democratic Congress (NDC) under a democratic

rule and won the power to rule for two conservative terms as that was the limit term given to democratic governance (Al-Hassan, 2004).

In December 2000, a democratic election was conducted whereby the New Patriotic Party (NPP) won an election with its leader being John Agyekum Kufour he was sworn-in as the president of the republic and ruled for two terms (Ninsin, 2016). In the year 2008, a democratic election was conducted whereby the National Democratic Congress won an election narrowly by Prof John Evans Atta Mills (Asekere, 2019). Prof Mills unfortunately died as a president ruling for a short term in his first term allowing the vice president in the person of John Dramani Mahama to be sworn in as president. In 2012 an election was conducted and the then vice president who was a caretaker won the elections and was sworn into power. Nana Akuffo Addo of the New Patriotic Party won an election in 2014 beating President John Dramani Mahama to become the president of the republic (Asekere, 2019). He was given the second mandate to serve his two terms. The next coming election will be conducted in 2024.

## **2.2 Educational System**

The British planted an educational system in the country. The educational system is structured into three (3) phases. The phases are the Basic, the High school and the Tertiary levels of education. The Basic level which comprises of the nursery to the primary. The High school level, which is from standard 7 to 10. Finally, the Tertiary level comprising of the university, post-secondary, nursing colleges, and the polytechnics with a variation in the duration within 3 to 4 years. Previously the country used a 6+4+2+3-year (i.e., 6 years for primary school + 4 years for middle school + 2 years for secondary + 3 years for O Level) duration in schools which was taken under the 1987 educational reform. (Eyiah, 2004; PG admin).

In the year 2007, another educational reform was put in place which was slightly different from the first one recommending that the educational system be structured into the form that children could start school at the age of 4 years and the high school be extended to 4 years. In 2009, there was a review of the educational reform of 2007 asking that they go back to the 3 years for the high school as well as the technical, vocational, agricultural colleges. Pre-school or kindergarten is a stage that takes children through the rudiments in education, thus the stage that kids learn letters of the alphabets, numbers, poetry, and rhymes which serves as the foundation for primary education (PG admin, 2021, study country, 2021). At the primary stage, children are thought the basis of things and they are taught how to apply them. After primary school which lasts for 6 years, children now qualify to enter junior high school where they also spend 3 years in that categorization. At this stage, pupils are empowered to get skills in

vocational and technical education, and they are also exposed to general education grasping some fundamentals of senior high school. Students who complete this stage are given a certification known as the Basic Education Certificate Examination (BECE) where they are examined in 8 to 10 subjects depending on the choice of the school. After this stage, students are enrolled into the secondary school where they are exposed to many categories of specialty fields to build their competencies and their interests (PG admin, 2021, Study country, 2021).

### ***2.2.1 Teacher College of the Education System***

The Ghana teacher training started in 1848 in Akropong Akwapim by the Basel mission with the award of certificate B. It was a two-year certificate program that was implemented to have more teachers in the system to help advance the need for education in the country (PG admin, 2021, Study country, 2021). In 1951, a development plan was implemented which sort to improve the quality of the outputs of teachers and to advance the course for the development of the country. The country further saw a change from the certificate B to a certificate A which was awarded after three years in studies. In line with this development, teachers who had certificate B were asked to top up with two years to be awarded a certificate A. With the expansion of the educational system in the country there was another introduction of a two-year certificate for secondary school leavers (PG admin, 2021, Study country, 2021).

Some years ago, teachers were awarded a three-year post-secondary certificate A, with some schools specializing in some specialized programs like French, technical and vocational studies, and some generalist programs. Teachers of this category were made to teach at the primary and junior secondary school levels. Students were taught subjects such as English Language, Mathematics, Ghanaian language and culture, Integrated science, Environmental and Social studies, Prevocational skills, and Religious and Moral Studies. (PG admin, 2021, Study Country, 2021).

Currently, the teacher colleges have been converted into colleges of education, status with the award of degrees and diplomas in education with recipients of these awards trained to teach in the primary, junior secondary and senior secondary schools. Some of these programs taught at this level includes education, sciences, mathematics, social studies, technical skills, and vocational studies (PG admin, 2021, Study Country, 2021).

### ***2.2.2 Environmental Education Programs***

The studies of environmental education programs are infused in many courses that are run by the various institutions that undertake teacher education. Key among them is the science

programs that are ran by the institution. The science programs include environmental studies, agricultural science, and pure and general science.



## **CHAPTER THREE**

### **METHODOLOGY OF THE RESEARCH**

#### **3.0 INTRODUCTION**

This chapter describes the method that was used in conducting the research work. Some of the important topics that were considered by the researcher are as follows: the philosophical foundation, the target population, the study area, research approach, sampling and research design, data collection methods, reliability, and validity of the study as well as ethical considerations. The research also made use of a document analysis of the curriculum of Wesley College of Education on environmental education, a primary curriculum on environmental education, and junior high school environmental education.

#### **3.1 Philosophical Foundation**

It is crucial to place the methodological approach inside a philosophy of science before talking about the specific research methodologies. Social research is influenced by the epistemological and ontological considerations rooted in worldviews or paradigms (Bryman, 2012).

A worldview means “a basic set of beliefs that guide action” (Lincoln & Guba, 1990 as noted by Creswell, 2014). According to Creswell (2014), worldview refers to the researcher's philosophical perspective on the world and the purpose of their research. These worldviews are influenced by the student's discipline and prior research experiences. As a result, researchers will frequently adopt a qualitative, quantitative, or mixed methods approach in their research as a result of their beliefs. Hence, worldviews provide values that inform the researcher about what should be examined, how it should be studied, and how the study's results should be evaluated (Bryman, 2012, Creswell, 2014; Kivunja & Kuyini, 2017).

There are four basic worldviews to use when conducting social research. These are Transformative, Pragmatism, Interpretivism, and Positivism. They have an impact on how social phenomena are viewed and how the social world is examined (Bryman, 2012, Creswell, 2014, Saunders et al, 2009). It's crucial to keep in mind that these worldviews can be distinguished by the diverse epistemology, ontology, and methodological presuppositions that they make (Bryman, 2012; Saunders *et al.*, 2009).

Epistemological consideration “concerns itself with what should be regarded as acceptable knowledge” and ontological view connotes “the nature of social entities”, so, to what extent are

social issues internal or external to societal structures? (Bryman, 2012, pp. 27-32). The approach utilised to conduct research within the context of a specific paradigm is referred to as the methodology. If social reality should be viewed as objective, exclusive, and free from any human influences, then it must be researched using natural science methods, or positivism, according to the dispute among scholars over epistemology and ontology. Alternatives include constructivism/ interpretivism, which views social problems as social constructions open to human interpretation and intervention, or pragmatism, which blends ontology and epistemology (Bryman, 2012; Creswell, 2014).

It makes sense that this study would use the interpretivist-constructivist paradigm in light of this. According to the epistemological paradigm known as interpretivism, the social sciences' focus on people and their institutions is fundamentally different from that of the natural sciences (Bryman, 2012). Additionally, proponents of this perspective assert that researchers' involvement with reality provides truth or true meaning (Crotty, 1998, p. 8). Because of this, the theories and methods used to research human behaviour and social events are not mutually exclusive but rather interact, making them strongly influenced by a variety of outside forces.

Constructionism is the interpretivist paradigm's ontological approach. Constructivism claims that "social actors continuously achieve social phenomenon and their meanings" (Bryman, 2012, p. 33). Humans are the most "variable of all variables," says Agyemang (2017). (Meaning their behaviour at a particular point in time may not be consistent with their behaviour at another time). This suggests that knowledge is constantly being revised and is created through social interaction. Investigating the importance of teaching environmental education to students at the Wesley College of Education is the main goal of my study in this regard. As a result, positivism's advocacy of absolute or unchanging principles in the natural sciences may not be appropriate to this subject (Bryman, 2012, p. 34). As a result, given the time period, the pragmatist mixed method approach is impractical for a study of this nature.

A qualitative technique will be used, in which data are carefully evaluated, to research social phenomena in a useful way. Consequently, qualitative ethnography, which comprises focus groups, in-depth interviews, document analysis, and participant observation. This will help the researcher gain a better comprehension of the social interactions among the sample units being investigated for this study.

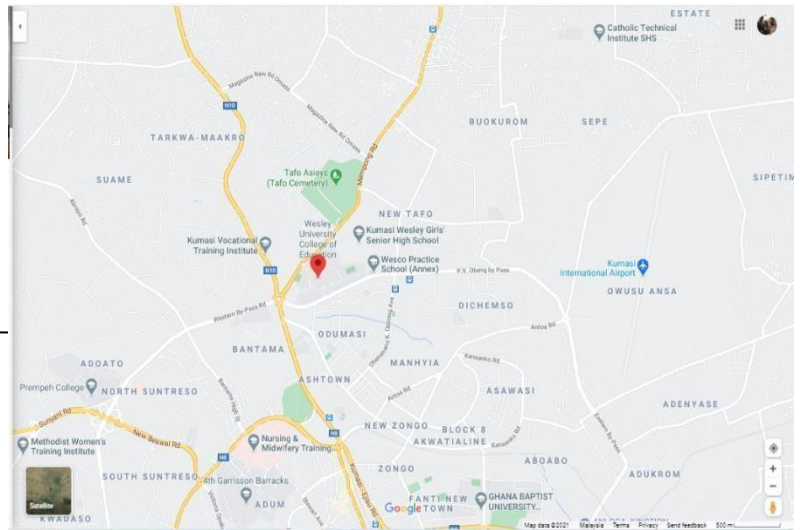
### **3.2 Target Population**

The target population of this study was the teacher trainees and teachers at Wesley College of Education within the Kumasi metropolises, which is in the Ashanti region of Ghana. According to Atuguba (2019), there are 46 university colleges of education located throughout Ghana, including all 16 administrative areas, including the Kumasi Wesley College of Education. The Ashanti Region of Ghana has 4 colleges of education: The Offinso College, Mampong Technical College of Education, Akrokeri College of Education as well as Wesley College of Education. The significance of teacher education is the belief that child or student development is centred on teacher education; hence knowledge in environmental education will go a long way to affect students meaningfully. The College was set up in the colonial era, and it was initially established for the training of teachers, catechists, and ministers. After independence, the College was absorbed by the government in partial agreement with the Methodist Church hence putting it in the same categorization as all the other university colleges of education across the country.

University of Ghana (UG), Kwame Nkrumah University of Science and Technology (KNUST), and the University of Cape Coast's (UCC), University of Education Winneba (UEW), and University of Development Studies (UDS) created a centralised curriculum for the university colleges of education. It is in charge of holding exams and certifying certified teachers who are enrolled in the country's forty-one (46) university colleges (Atuguba, 2019). The school was set up in 1924 by the Methodist Church of Ghana. It runs programs in diplomas and degrees meant for the primary, junior high, and senior high schools. One of the reasons for choosing this study area is because the researcher is familiar with the community as I have attended a college of education before. During that time, we always had inter-colleges where all colleges around the region rotate annually to have sports activities and other social activities. This serves as socialization for students and to help address some of the problems that colleges of education are meeting. Wesley College of education pursues environmental education as one of the core programs for all the teacher trainees as part of its curriculum.

### **3.3 Study Areas**

The organization that was selected for this study was Wesley College of Education within the Kumasi metropolis found between New Tafo and Old Tafo towns of the Kumasi Metropolitan Assemble (KMA) in the Ashanti region of Ghana. Most of the people in New Tafo and Old Tafo enclave are traders. They also have cottages of industries and considered as the industry hub of the region as well as government institutions like the fire services departments, police stations, and schools. Below is the map showing the school location.



Source: Ghanamissionun.org; from: <https://www.ghanamissionun.org/map-regions-in-ghana/>

**Figure 1: Figure showing the study area and its region.**

### 3.4 Research Approach

The study used a qualitative research method. The approach is considered appropriate for this study because it employs different techniques to obtain in-depth information. This enhanced understanding of the meaning and significance of environmental education among respondents of the study area. The critical approach aims to look beyond what we see to consider the larger social structures and distribution of power behind them. Critical approaches are also aimed not just at explaining the world as it is now, but also at trying to bring about social change to the life of the people.

#### 3.4.1 Sampling and Research Design

In this study, the Wesley College of Education within the Kumasi metropolis was selected using a purposive sampling technique. The reason for utilising the purposive sampling technique was because it is more proper for the research. Also, it is both less costly and time consuming because of the study period. The purposive sampling technique is also known as the judgment or deliberate sampling approach. This is because the interviewer will use his discretion to select the participants for the study that will be suitable to take part in the study (Flick, 2018; Cohen *et al.*, 2006). Again, this approach was adopted because there is inadequate primary data about Wesley College of Education within the Kumasi metropolis in terms of environmental education and with teachers on training who play a vital role in the society.

Given this, to gain access to the participants of this study, the researcher used two (2) groups of respondents, the teacher trainees and the teachers at Wesley College of Education. In

particular, the researcher through questionnaire form requested the list of staff assigned to the teaching of environmental education in Wesley College of Education. Then the respondents were randomly selected from the list. Depending on the number of tutors, two (2) of them were selected including male and female tutors. Corresponding eight (8) teacher trainee students were also selected based on their proportionate gender composition.

Furthermore, participants for this study were chosen via deliberate sampling. This is due to the fact that purposeful sampling entails selecting participants in accordance with the stated goals and purposes of the proposed study as reported by earlier studies (Creswell, 2014; Cohen, 2015; Flick, 2018). The researcher also made sure that the individual respondents meet the criteria for the research and ensure that they fulfil the purpose of the study. In this regard, the researcher chooses the respondents from tutors and teacher trainees at Wesley College of Education especially tutor in the relevant field. The tutors were chosen from the general staff list showing their field of competencies and requirements. Thus, environmental education teachers and teacher trainees were selected from their respective field of study since environmental education as a course is infused in Social Studies program of Wesley College of Education. This program is mandatory for all students irrespective of their specific areas of study. Likewise, the researcher also used focus group discussion (FGD), by putting the respondents into two (2) groups with five (5) members. This consisted of 1 teacher and 4 students in each of this group. I also tried to spend sufficient time with each of them for instance a maximum of an hour each. This helped for the teachers and students to brainstorm on a given topic or a theme. Furthermore, the researcher also conducts observations and interviews alongside the other methods mentioned earlier. This form of an approach is known as triangulation as it helped ground the research work to help bring about a formidable result (Flick, 2018). More so, a well-designed and systematic set of structured questions created by the researcher was used for each interviewee. Added probes was used as needed to obtain more relevant information about study, to clarify explanations, as well as make improvements based on the views expressed by the teacher trainees who will serve as respondents (Flick, 2018). Finally, all the designed questions were open-ended meant to discover more information from respondents for further assessment and interpretation of respondents' views.

#### ***3.4.2 Data Collection Methods***

In this study, a document analysis of the curriculum of Wesley College, the curriculum of junior high school and the primary school combined with unstructured observation and semistructured interview guides for the collection of the primary and relevant data from respondents. This triangulation helped to increase the validity of the research work. The researcher as part of

finding the facts on the ground went round to observe the environment of Wesley College of education and the surrounding environment thus, New Tafo and Old Tafo communities since whatever environmental issues that pertain there also affects the school. Through this observation, the researcher gained the actual picture of Wesley College of Education environment and environmental-related issues as discussed earlier and synchronizes that with the expected objective views of the respondents.

### **3.5 Document Analysis**

A document analysis was done on the curriculum of Wesley College of Education, the primary and junior high school curriculum of Ghana education service.

#### ***3.5.1 Unstructured Observation***

The use of unstructured observation is an important way of collecting data from respondents where the researcher can take note of key issues or at times take part in the study to gain more information from the respondents (Jamshed, 2014). Using unstructured observation is therefore considered a right method in collecting data for qualitative research work (Flick, 2018). This study focused more on the non-interventional method or technique of observing the participants. This helped the researcher to gain more insights on the activities of the teachers and teacher trainees from Wesley College of Education that constitute the respondents of this study. Four times visit was done to Wesley College of Education before interviewing, so as to obtain the necessary approval from the school authorities and help to acclimatize myself more about the school. Furthermore, the researcher visited the department in charge of the teaching of environmental education in Wesley College of Education within the Kumasi metropolis.

#### ***3.5.2 Semi-Structured Interviews***

To allow respondents of this study to freely supply more reliable information, a semi-structured interview was undertaken. This is of good feature in a qualitative study that offers the opportunity to express their views the way they want. (Cohen, 2015; Flick, 2018). Given that a semi-structured interview was used as one of the techniques to obtain data from respondents of this study. Undertaking a semi-structured interview will help in the conduction of interviews leading to valuable answers. The semi-structured interview method is important because it helps researchers to have control of the data collection process (Flick, 2018). Again, this method uses a small number in the participation of the interviews. In this case, the researcher adopted the use of open-ended questions since this will make the respondents feel free and willing to provide answers to the respective questions with their clear views on the questions

at stake. The researcher also ensured that the question was structured under various themes that simplified the questions for respondents to actively take part in answering the questions.

### **3.6 Reliability and Validity of the Study**

Reliability and validity of every research are major and essential aspects in a research work that seeks to put the research work into a test by ensuring that the research findings can be said to be a true reflection of the outcome, is consistent and reliable, and is capable of serving as the guarantee of the results obtained from the participants (Flick, 2018; Cohen, 2015). In this study, the researcher ensured that trustworthiness and consistency was brought into this study by going according to the laid down rules about how to obtain reliable and valid research work. According to Cohen (2015), the introduction of reliability and validity in a study guarantees the effectiveness of the research work and that it is one of the main requirements for good qualitative research works. The researcher also made sure that when the research is repeated based on the results that will be obtained the second time at the same place or any other related area. This will ensure the same results by making sure that most errors that may emanate from the respondents are reduced to the barest minimum as well as participants' biases. By the above-discussed criteria and requirements for credible research, and in essence, it will be justifiable to regard findings from such research as being reliable. Again, based on past studies, validity is another approved criterion for deciding the quality of research to obtain varied views of respondents that involve qualitative study (Flick, 2018; Cohen, 2015).

### **3.7 Ethical Consideration**

Every good research work should be bound by ethical values. Ethical research is keen about what researchers ought and ought not to do in undertaking research work; it has a cutting edge of cutting through up to the end of the research work (Cohen, 2015). Congruent to this, Oliver (2010) asserts that ethical issues arise out of the nature of the research project, the context for the research as well as its procedural processes such as methods of data collection, nature of participants, as well as types of data collected. The researcher made sure the interviewees consent was given, by telling them that they have the free will to take part, and they are free to stop participating in the interview. Again, the researcher also made sure that a code was kept on the computer and also ensured that the designed instruments for the study are secured in the locker. As by the rules of the Oslo Metropolitan University, students are by law supposed to follow a standardized ethical regulation where every student must keep data of information from interviewees confidential. The researcher also made sure the respondents were informed that their views will be recorded based on their approval. The interviewees were also told about the key elements of the research study and what will be needed from them. The researcher also ensured that the information provided by the interviewees is kept confidential by ensuring that

they are assigned with special codes. This was kept under locks on my computers and other gadgets that will be used to obtain information from the respondent. These data cannot be easily retrieved so that other people cannot retrieve the information without the researcher approval. Additionally, the researcher ensured that interviewees do not suffer any stress because of the research. Therefore, I ensured that interviewees were fully debriefed at the end of the study. More importantly, the researcher also made sure that participants have their right to privacy during and after the period of the study in terms of the information they have provided. The researcher got participants informed that they have the right to redraw at any point in time, even after the study has been completed.

In adherence to ethical regulations, every student at Oslo Metropolitan University is required to apply to the Norwegian centre for research data to seek permission in collecting personal data. As part of the regulations, an application was put in on the date of 1<sup>st</sup> of October 2021 to seek permission in undertaking this research. By this application, the researcher was asked to specify the methods by which the research was going to be undertaken. The researcher was also asked to show the ethical regulation that was going to be applied. The researcher was also asked to attach the interview guide. NSD approved my application in 18<sup>th</sup> October 2021 expect that by the end of November 2022. Due to data privacy and ethical regulations, recordings via telephones will be transcribed by the researcher.



## **CHAPTER FOUR**

### **THEORETICAL FRAMEWORK**

#### **4.0 INTRODUCTION**

The theoretical underpinnings and pertinent ideas that undercuts from the findings are presented in this chapter. Three theories were effectively used in this investigation. These include the concepts of nature and environmental knowledge, environmental attitude and knowledge, critical pedagogy philosophy, and curriculum. It will cover the emphasis placed on environmental education, its subject matter, its uniqueness and applicability, the activities involved, and the necessary government policy statements. The reasons for using theories is to help complement each other theory in their various unique ways to help analysed the findings that will be gotten from interviews from the respondents in responds to the research questions and themes that was developed. Also, this will help elaborate it and make meaning to the findings that will be gotten. They are also presented to understand how environmental education is presented and discussed with student teachers.

#### **4.1 The Theory of Environmental Knowledge and Attitude**

In exploring the key concern of this research thesis, there is the need to highlight the basis of knowledge and the attitudes of students who are taught on environmental issues or partake in environmental education. The theory of Environmental Knowledge and Attitude framed by Nagra (2010) is developed to assist outlining the impact of environmental education on the attitude of people. Regarding the impact of knowledge about the environment; pollution reduction for instance can be enhanced by increasing public knowledge of ecology alongside developing favourable public attitudes to ecological programs. This helps underscore the importance of environmental knowledge in shaping individual attitudes as part of measures to protect the environment. As expounded by Flamm (2006. p. 14), "Knowledge refers specifically to an accurate understanding of an issue under consideration", in this case, the impacts of environmental education on the attitudes of people who receive this form of education. An attitude on the other hand is defined as "a disposition to respond favourably or unfavourably to an object, person, institution, or event" (Ajzen 2001). Increased knowledge appears to moderate environmental concern, according to research by Ramsey and Rickson (1976), who examined the relationship between environmental attitude and environmental knowledge. Furthermore, by emphasising that information and attitude are both considered essential for modifying how people behave toward the environment and for the development

of wise environmental policies. A person becomes more knowledgeable when they are exposed to detailed sources of information, as demonstrated once more by a study by Arbuthnot (1977, P 229). Being somewhat liberal in his political, social, and religious beliefs, the enlightened individual would understand the probable consequences of his acts. The Theory of Environmental Knowledge and Attitude would be used to produce crucial data on the importance of environmental education in enhancing environmental knowledge and how this further translates into the desired changes in environmental attitudes.

#### ***4.1.1 Nature and Environmental Knowledge***

The content of the curricula of environmental education in teaching and learning within the institutions of higher learning as well as its impact on the potential influence on nature and the knowledge gotten from curriculum would be relevant to underscore. The Theory of Environmental Knowledge would be useful in addressing this research aim and answering the question of how effective environmental education is, in bringing about the desired environmental and societal changes. For instance, we now have a far better grasp of several prevalent pro-environmental views and the factors that influence them. Many academics contend that these beliefs are rooted in people's innate attraction for the natural world. Other investigations looking into the causes of pro-environmental sentiments have concluded that these views are multi-dimensional and not based on a single element. Similarly, Kempton et al. (1996) contend those religious and ethical principles, pragmatic and anthropocentric ideas, and bio centric convictions that every living thing has a right to life and survival all have an impact on environmental attitudes (p. 87). In addition, Dunlap et al. (2000) identified a fresh set of variables that affect environmental values. They came to the conclusion that three important aspects of environmental views are ideas about the balance of nature, growth restrictions, and man's power over nature. They supported the notion that a variety of beliefs and values can be linked to environmental views. The subject of what determines environmental behaviour has become more crucial as environmental sentiments have gotten stronger. The literature generally accepts the previous statement. The content of environmental education would be evaluated using the Theory of Nature and Environmental Knowledge.

Similarly, the ripple effects on people's attitudes, and how this form of education has proven to be effective will be evaluated for the desired environmental changes.

## **4.2 THE CURRICULUM**

There have been many definitions of what curriculum means by different writers. Curriculum can be defined as an expanded outline of content for teaching and learning in educational

institutions. This content consists of the several topics of environmental education that students are going to learn.

The United Nations Educational, scientific, and cultural organization (UNESCO, 2014) says that the curriculum should have five (5) cardinal points. These are ‘what is learned’, ‘what learners are taught’, ‘the methods that are used in delivering class lessons’, and final the mode of ‘assessment’ and ‘evaluation’. The intended goals to be accomplished are measurable and tangible.

The curriculum of the College of education, which Wesley College is partly aimed at achieving quality instructions that will help to meet society's teacher demand and expectation (NaCCA, 2019). Hence the curriculum designers have planned to give direction to student teachers to achieve the set goals.

#### **4.3 CRITICAL PEDAGOGY**

Critical pedagogy is a theory that is much credited to Paulo Freire from Brazil a philosopher of education and social movement. Most of his concepts were derived from critical theory. It is much applicable to the educational field and the study of culture. One of the books that were written by Paulo Freire which is titled teachers as cultural workers explicitly talks about his life experiences as a teacher and a social theorist. Additionally, he writes about the knowledge content in education and what is expected of a teacher in the classroom. He emphatically says that teachers are to reflect critically on the methods and mode by which knowledge can be taught in the classroom. (Freire & Macebo, 2005). He further goes on to show that students are not tabula Rasta So, there is some knowledge in learners which is supposed to be allowed to be manifested by allowing students to take part in the learning activities in the classroom. He, therefore, states that students must be shown with respect and love, for them to come out with their views during class activities. (Freire & Macebo, 2005).

Freire & Macebo (2005) goes on to show that it is particularly important for every professional qualified teacher to have some qualities to make them efficient. These qualities he says will help to make the teacher effective and be able to contribute to the development of the students.

These virtues as indicated by Freire are love, tolerance humility, flexibility, and security. Furthermore, Freire & Macebo (2005) are of a critical view that love is the foundation that all teachers should build their duties. He goes on to indicate that without love teachers will not be able to carry themselves well and discharge their duties meaningful. This goes on to indicate that teachers and learners must be allowed to apply their knowledge in environmental

sustainability to contribute to environmental education to help bring about environmental sustainability. Guru (2011) with research about critical pedagogy in the classroom and the community showed that the application of critical pedagogy contributes to the growth of a society as individuals are empowered and see everything as their own.

Freire & Macebo (2005) says that teachers are supposed to discharge their duties with competence. He finds out that competencies in education may require knowledge, skill, and attitude as well as methodological approaches in teaching. He further goes on to indicate that a professional teacher should have the ability to apply theories in the discharge of their duties and not necessarily bear the tag as a teacher.

## **CHAPTER FIVE**

### **LITERATURE REVIEW**

#### **5.0 INTRODUCTION**

This chapter discusses literatures related to the topic. The following are themes developed:

Brief history of environmental education, a brief history of Ghana's educational system, environmental education to education for sustainable development, the environmental education curriculum, holistic approach to environmental education, technology and challenges about environmental education.

#### **5.1 BRIEF HISTORY OF ENVIRONMENTAL EDUCATION**

In their book "The History and Philosophy of Environmental Education", Robert L. Carter and Bora Simmons in 2010 indicated that the start of environmental education is exceedingly difficult to tell and that scholars today hold diverse opinions about the cradle of the word Environmental Education (Simmons *et al.*, 2010). According to the authors, the terminology "Environmental Education" has been a vernacular term with the occurrence of some form of disagreement about the first use of the term. In the view of Simmons et al. (2010), the term Environmental Education was once used after the end of the Second World War but failed to gather much prominence. The proliferation of efforts to curtail environmental menace came into prominence after the post-war years. As this is evidenced in the world union conference in Paris in the year 1948 with the conference which saw the establishment of the International Union for the Conservation of Nature (IUCN), with the sole objective of protecting nature and habitats. Simmons et al 2010 says that the outcome produced specifically calls for "education in environmental matters" for the younger and older generations alike (UNEP, 1972, Simmons *et al.*, (2010). Atuguba (2019) indicates that in history, as far back as the 18th century, a French man by the name Jean-Jacques Rousseau is also recognized as a contributor to modern political, economic and educational thought. He is credited on the basis that he advocated for man's relationship with nature and demanded good stewardship with nature rejecting the idea of treating the environment as a resource for the benefit of man (Atuguba, 2019).

Furthermore, credence is also lent to Aldo Leopold as one of the pioneers in the modern conservation movement. Leopold suffered his sudden death fighting a fire on a neighbour's farm as indicated in Meine's book in 1988 (Atuguba, 2019). He challenged the pursuit of wealth

at the expense of the environment and spoke extensively about the connection between people and the environment. During the early 1960s, two influential publications exposed the American public to escalating environmental issues. First, Carson's paper "Fabric of the Environment" from 1962 claimed that the arsenal of chemicals produced and employed to "manage" weeds and insect populations were having negative effects that went well beyond their intended use as "pest control." The second landmark publication was by Wallace Stegner and Steward Udall, authors of "The Quiet Crisis" which was published in the year 1962. Additionally, there were many awakenings, with other typical movements and advocacies including the Civil Rights movement and the Vietnam War protests in the 1960s. The year 1970 was epitomized by prolific growth for Environmental Education (Atuguba, 2019, Carson, 1994).

Lee (2006) cites that it has become very imperative that this current dispensation becomes very connected to nature. He further shows that this connection has become necessary because of the heightened global environmental concerns. Carson (1962) asserts that the start of the environmental movement came because of the publication by Rachel Carson, an American marine biologist, and environmentalist who authored a book titled "The Silent Spring". The book reports of the adverse environmental effects which were attributed to the indiscriminate use of pesticides. This book was faced with fierce opposition by manufacturers in the chemical industry with public opinions because of the many changes which finally spurred a reversal in the use of dichlorodiphenyltrichloroethane (DDT). In addition, he shows that this contributed to the formation of policies and enactment of laws that saw the establishment of the national environmental education by the United States of America. After Rachel Carson's publication, *The Silent Spring*, it had massive media coverage with the publication of many books as well as other institutions such as Friends of the Earth advocating for the need to protect the environment (Stevenson, 2007). Gough (2016) comes out to say that the term environmental education came into the limelight in 1948 at a meeting of the International Union for Conservation of Nature and Natural Resources (IUCN). The deliberations outcome advocated for sustainable use of natural resources, generates advocacy and education to influence, encourage and aid societies across the globe and that the use of resources should be fair and ecologically sustainable.

What was essential to environmental education was identified by Stapp *et al.*, (1969, p. 34). They therefore stated that the goal of environmental education is to create informed citizens.

This relates to the biophysical environment and the difficulties that go along with it, is aware of ways to assist in solving the problems that have been recognised, and is driven to work hard to find answers to these problems. They are of a critical view that humanity is inseparable from the ecosystem and that human has influenced the environment massively in a negative way and advocates for a better relationship with the environment. Palmer (2002) affirms that the meeting which was undertaken by IUCN gives a perfect definition. They define "Environmental Education" as a process of recognizing values and expounding concepts to cultivate skills as well as attitudes which are necessary to have an understanding and appreciation of the interrelatedness existing around man. Critical about the definition given by Stapp *et al.*, (1969) are the elements captured in their definition about environmental education, emphasizing more about knowledge acquisition, and awareness of the environmental situation that is prevailing. UNESCO (1972) held an environmental conference in Stockholm, Sweden, where this conference birthed out three major declarations that were purported to help address the global pandemic of environmental challenges. This declaration helped to create a discourse on Environmental Education across the globe, both at national and local levels. Carter and Simmons (2010) is of the view that the Stockholm Conference created awareness and wrote down that the Belgrade, Yugoslavia Conference which took place in the year 1975 generally resulted in what became known as the Belgrade Charter. The authors go on to say that this Charter set up the aims, audiences, and guiding principle of Environmental Education. In this Charter, environmental education was defined as a process intended to create a global population that is aware of and concerned about the environment as a whole and the issues that are related to it. Additionally, it showed that it should possess the knowledge, attitudes, motivations, commitments, and abilities necessary to work both individually and collaboratively toward present problem solutions and the avoidance of future ones (UNESCO - UNEP, 1972, p.2).

UNESCO (1972) continued to indicate that there were seven proclamations and twenty-six principles that were declared in the Stockholm declaration. These proclamations were to help in safeguarding and helping to improve the environment as well as categorically talking about the importance of Environmental education to that respect. They further indicated that it is important to make it part of the curriculum in the academic calendar.

Machado *et al.*, (2016 P. 907) cites Palmer and Finlay (2003) by saying that “environmental education generally focuses on 1. Awareness and sensitivity about environmental education 2.

Knowledge and comprehension of environmental issues at many scales, from local to worldwide, as well as knowledge of various effects, whether they be natural or human, 3. Beliefs that assist preserve the environment's quality include attitudes toward environmental concern and the value systems that support those beliefs. 4. Capabilities to lessen and resolve environmental issues 5. Active involvement in programmes already in place that are relevant to the environment”.

### ***5.1.1 A Brief History of Ghana`s Educational System***

They`re existed education in Africa long before the introduction of formal education, which was referred to as traditional education. In this kind of education, knowledge is passed on from generation to generation. Antwi (1992) is of the view that formal education started after merchants arrived in the country to do trading. He goes on to indicate that this kind of formal education designed by the merchants first for the offspring that the colonial masters had with the Ghanaian women. These educated children were to serve as the intermediaries in their trading business.

Akyeampong *et al.*, (2007) indicate that the full pledge of formal education came into full play in the country when Britain was in full authority in Ghana then called Gold Coast. The work of the missionaries and traders played a key role in the dissemination of education. However, there was no specific plan that was implemented by these authorities; hence there were variations in curriculum implementation in the various schools. This made the Ghanaian government introduce a plan to address the issue in the year 1882 to help in the development of education. There was key importance placed on the implementation of teacher education seen to be one of the key disseminators of knowledge to the citizenry to help in educational development which was in the year 1933 (Akyeampong *et al.*, 2007).

Little (2010) indicates that when there was the need for the expansion of education in the country a scheme known as the Accelerated Development Plan (ADP) was developed to expand the educational standard in the country. This proposal was to help in the expansion of primary and middle school education. The introduction of the Accelerated Development Plan led to massive enrolment of teachers in the country. Students were enrolled into teacher training colleges as well as the acceptance of pupil teachers into these training colleges to help increase the number of trained teachers in the system. The government also made sure that he introduced free education to help increase the literates in the country so that they can help to develop the country.



According to Addae-Mensah *et al.*, (1973), the Accelerated Development Plan included six years of elementary education, four years of secondary school, and two years of courses that prepare you for university. Additionally, they mentioned that individuals who failed to enrol in the sixth form also pursued a two-year vocational certificate.

Nyoagbe (1993) cited that the Accelerated Development Plan about education was seen to be too long and so there was a shift again in the educational system, where there was the introduction of the junior secondary system. Individuals were expected to spend three years in the junior secondary school and six years in primary school, which is supposed to be free and compulsory for all students in the country.

There have been a lot of changes in the number of years to be spent by students in the senior secondary school. This is being engineered by the two dominant political parties in the country that is the National Democratic Congress (NDC) and the New Patriotic Party (NPP) changing the duration of the school anytime they come into power. Some are suggesting 3 years and others are supporting 4 years. Currently, the ruling party has introduced a free compulsory school for all students starting from junior high to senior high. In this respect, there has been the astronomical jump in enrolment which has made them introduce batches of attendance in schools. Colours were allocated to students for attendance, with the colours being gold, yellow and green, cards for attendance.

## **5.2 Environmental Education to Education for Sustainable Development**

According to Yusoff (2003, p. 75), environmental education is associated with behavioural changes that take both cognitive and affective forms. He also points out that environmental education has a number of unique characteristics, such as being inter-disciplinary, being a lifelong process of learning, and using a holistic approach to examine a problem's ecological, social, cultural, and other facets as well as its solution.

Ciplet and Robert (2017) indicate that the Stockholm declaration also sought to create awareness about the deterioration effects of the environment. As well as the need to put in measures to curtail environmental crisis thus emphasizing that it was tuned to create a world population that is aware of and concerned about the total environment and its associated problems. Tilbury (1995) is of the view that the public concerns about Environmental Education got heightened in the 1980s because of many discourses and publicity that were given to it, and this helped to broaden the horizon of the need for environmental concerns to help mitigate the global climatic changes that were on the ascendency. Tilbury says that it was this time that Environmental Education shifted and sought to use education for sustainable

development. He goes on to indicate that sustainability for environmental education was fully embraced at Rio de Janeiro (Brazil) when the Earth Summit took place in 1992. Now, the Summit advocated for a re-orientation and to tune the focus to sustainability and called on people to help address issues about the environment and development. Flamm (2006P.14) says that "knowledge refers specifically to an accurate understanding of an issue under consideration" and further indicate that it's only education that can help to achieve environmental sustainability. Geiger *et al.*, (2018) indicates that "Environmental knowledge is seen as a behaviourally distant variable that forms the base for a positive attitude towards nature, which serves as motivational forces to engage in ecologically responsible lifestyles" Kostova and Atasoy (2008) assert that, "the effective teaching in environmental education is intimately tied to the methods employed by the instructor and the learners". The authors further indicate that the teaching and learning strategy is significant in the learning process and advocate for a student-centred education strategy. They also suggest that an inquiry base approach in environmental education helps in the understanding of environmental education better. So according to Yusoff (2003, p. 75), while our generation has experienced unprecedented economic growth and technological advancement, which have benefited many people, they have also sparked serious social and environmental consequences. As a result, environmental education must receive a lot of attention. Yusoff's (2003) further indicate that, "the development of the school curriculum in Malaysia emphasises the integrated curriculum on the general education concerned with the balanced growth of students through developing fundamental skills and instilling healthy lifelong attitudes and moral values that are fundamental to maintaining Malaysian society." She also says that environmental education in the early years included a lot of other courses that dealt with the social, cultural, and biophysical environment and were meant to help children have some sort of connection to the environment.

### **5.3 The Environmental Education Curriculum**

The United Nations Educational, Scientific and Cultural Organization are of a critical view that environmental education is incredibly significant in impacting the individual with knowledge. This will have a significant repercussion on the awareness of knowledge about the environment which will go a long way to help in knowledge implementation to help change the dynamics of environmental consequences. De la Vega (2004) indicates that a research on the topic of awareness, knowledge, attitude about environmental education in south Florida in a high school, proved that environmental awareness was high with students. He indicated that the T-test scored high for the students as compared with the parents and that this is because of the education that the students were given. It is of a critical view that Environmental Education will help in safeguarding the quality of lifestyle in the future, since education about the

environment will help to put up a strategy that will help put an inherent behaviour of respect for nature in societies. According to Rice and Kitchel (2016), who also cite Kaplan and Owings (2002), student achievement can be significantly impacted by the quality of a teacher's instruction, including that teacher's mastery of the subject matter and methodology. Moreover, a study by Rice and Kitchel (2016) titled *The Influence of Content Knowledge and Students on Beginning Agriculture Teachers Approaches to Teaching Content* supports the idea that the effectiveness of a teacher's instruction, including that teacher's knowledge of the subject matter and pedagogy, can have a significant impact on students' academic success. According to AlRawi (2013), "the teacher uses the teaching method as the mechanism to arrange and carry out a number of educational means and activities to reach specified goals." He continues by saying that "teaching approaches are the ways that represent the success of the learning process and the competencies of the teacher" (paraphrase). Landøy *et al.*, (2020 p.137) is of the view that the way we teach is influenced by the way we perceive learning. They further indicate by classifying the teaching and learning methods into three as centred on the teacher, focused on the interaction between teacher and student and lastly student centred or participatory methods (Landøy *et al.*, 2020 p.137). They further indicate that teaching and learning methods approaches comes with its advantages and disadvantages and that it's important to adopt an approach that suits a learning process. (Paiva *et al.*, 2016 P.908) cites (Forman & Cazden, 1986 p. 432) as saying that "classroom discourse has been acknowledged as vital to the educational experience of student's speech makes available to reflection the mechanisms by which they pupils relate new knowledge to old knowledge. However, this possibility is dependent on the social networks and communication framework that the instructor establishes.

### **5.3.2 Holistic Approach to Environmental Education**

According to Uwaezu *et al.*, (2014), environmental education aims to increase global awareness of and concern for the state of the earth's habitats, including the atmosphere, the water, and the land, as well as plants, animals, and other types of species. Stevenson (2007), which indicates that environmental education must not be seen as a discrete subject and placed in the same category as maths, English etc. Kemp and Martens (2007) also state that Environmental Education and Sustainable Development examine the potential for monitoring and evaluating the outputs of higher education institutions or evaluate universities' capacity to produce intelligent, creative, and independent people while concurrently achieving more general policy objectives.

The holistic approach to environmental education, according to Mahmoudi *et al.*, (2012), embraces a wide range of philosophical orientations and pedagogical approaches, emphasises

wholeness, and tries to avoid excluding important facets of the human experience. They suggest that it is an open-minded movement whose central tenet is the notion that educational opportunities encourage more spiritual and dynamic, as opposed to purely materialistic, worldviews. Additionally, it suggests that education fosters a more balanced growth and improves the relationships between the various components of a human and their environment, including their inner selves, their natural surroundings, and their relationships with other people. A knowledge base for teaching that exists at the intersection of content knowledge and pedagogical knowledge, according to Rice and Kitchel (2016), who cite Shulman (1986), is known as pedagogical content knowledge.

Further indicating that native cultures are where the holistic ideas of environmental issues originated, Mahmoudi *et al.*, (2012) propose four learning foundations for holistic education. These include learning to do, learning to live together, learning to learn, and learning. The writers claim that the goal of holistic education is to alter the whole person, the whole community, the whole society, the whole planet, and the whole universe. They further go on to indicate that the goal of holistic education is to bring about development with the basic principles of holistic education being to help in making education for human development and honouring students to create the leading role of students.

Recent times have witnessed unprecedented calls for a holistic approach to environmental education; some individuals think that it cannot be single handled as a course. It is in this view that Stevenson (2007) indicates that it must not be seen as a discrete subject and placed in the same stands as the traditional subjects like Maths, English, etc. He calls on it to be put in a holistic approach that can be blended with other subjects to help propel it forward and make it open and strong. He further goes on to indicate that blending it with other subjects helps to give Environmental Education a unique educational dimension. He further re-emphasizes that there is no way it should be treated as a subject but must be accepted that it's a whole concept that will go a long way to help in the sustainability of the world. Hungerford et al. (1980) are of the view that putting it in a holistic approach will help all citizens to have the environmental knowledge, skills, and dedication to help achieve and maintain a dynamic equilibrium between quality of life and quality of the environment.

Stapp *et al.*, (1969) are of the critical view that governments have a great stake in the sources of Environmental Education since they represent the people, hence they must find solutions to the problems that confront their society. There is therefore the need to help formulate policies that will go a long way to help their society in the economic development of their people. He

further re-emphasizes that there is the need for all and sundry to put their hands on deck to fight this social canker that is engulfing all. He goes on to make a point that there is the need to build the cognitive knowledge of all, so that people will be enshrined with the willpower and ability to change the world for the better, and this is because there is the need for the detailed understanding of what the environment is made up of and what is likely to happen to the environment when measures are not followed. The following guidelines should be followed to ensure that environmental education is taught holistically. Also, environmental education should be grounded in knowledge, which is necessary to investigate, address, and solve environmental issues. Therefore, environmental education should foster the abilities required to investigate, resolve, and deal with environmental issues. The affective domain, specifically the attitudes, values, and commitments required to ensure a sustainable society, should therefore be included in environmental education (Stapp *et al.*, 1969). Ghana a country in subSahara of Africa appears to be battling with so many environmental challenges even though they have enacted and formulated numerous environmental laws and been signatory to many environmental conventions (Stapp *et al.*, 1969; Roth, 1992; Coyle, 2005). According to Amlor and Alidza (2016), "a major portion of traditional communities in Africa today still rely on indigenous knowledge passed down from generation to generation as they engage in agriculture and other activities that assure their comfort and livelihood." Amlor goes on to say that "environmental knowledge is an internalised cultural phenomenon applied to ensure the existence and welfare of people, and indicates that for this reason, they consider the environment as a living, breathing, and dynamic being that reacts in the same way as typical human beings do." Darko, (2014) quotes Dei (2000; P.6) by saying that "Indigenous knowledge is accumulated by individuals and social groups through historical and current experience". Thus, through the process of learning from old experience, new knowledge is also discovered. Further stating that "long before the arrival of the Europeans, Indigenous Ghanaian societies devised methods that protected their natural habitats through the enforcement of customary laws, taboos, stories, songs, riddles, proverbs, and ritual performances collectively referred to as folklore," (Amlor and Alidza, 2016).

Katie Kinnear (2021) indicates that "environmental education promotes critical and creative thinking skills and inspires kids to become more engaged with their communities. It helps kids understand why the environment is important and provides them with the building blocks they need to live eco-friendly and sustainable lives".

Pandey *et al.*, (2020), reiterate the objectives by UNESCO declaration in (1971) as creating "awareness about environmental problems among people, impacting basic knowledge about

the environment and its allied problems, motivating public to participate in environment and its allied problems. Also motivating, the public to participate in the environment protection and environmental problems thus acquiring skills to help the concerned individuals in identifying and solving environmental problems''. A Research by Machado *et al.*, 2016 on the topic the importance of environmental education in LLA lifelong education indicates that environmental awareness which is gotten from education from schools go a long way to help bring about a change in the attitudes of students and their society.

#### **5.4. Technology and Challenges about Environmental Education**

Incorporating students in environmental stewardship can be made possible by digital technologies like virtual meetings, mobile apps, and virtual and augmented worlds, according to Lay (2019, P. 2). Such tools can spark students' curiosity while also allowing them to record their impressions of the immediate and distant world. Fauville *et al.*, (2013), cite Rohwedder (1999), who asserts that "in order to maintain a global overview of the environmental education and ICT landscape, it is important to note that the internet also contains an impressive amount of tool games and activities dealing with the environment that could at least help some of them potentially be used in learning activities," reaffirm this.

According to Katie Kinnear (2020), "environmental education fosters critical and creative thinking abilities and encourages children to become more involved in their communities. It aids children in comprehending the value of the environment and equips them with the fundamentals for leading sustainable and eco-friendly lives.

Consistent with earlier studies by Pandey et al. (2020), who restate the goals of the UNESCO declaration in (1971) as raising "awareness about environmental problems among people, influencing basic knowledge about the environment and its allied problems, and inspiring public to participate in environment and its allied problems. Assisting those who are concerned in discovering and resolving environmental problems by persuading the public to participate in environmental protection and environmental problems. Yusoff (2003 p. 75) is of the opinion that "several factors explain for the low civic consciousness and poor public knowledge that led to environmental deterioration. Among these are inadequate knowledge of and instruction in environmental concerns, a lack of information and knowledge of environmental issues among the general public.



## **CHAPTER SIX**

### **PRESENTATION AND DISCUSSION OF FINDINGS**

#### **6.0 INTRODUCTION**

This chapter covers the outcomes of a case study conducted in Wesley College of Education in the Kumasi Metropolitan Assembly on environmental education in the Ashanti region of Ghana. The data were also discussed in respect to the various theories mentioned above in the chapter. The main goal of the study is to determine how much emphasis the college places on environmental education. Additionally, the course's distinctiveness, relevance, and environmental education's curriculum will be examined. More so, what are some of the activities implemented by the environmental education department in WCE in relation to the policy statement by the government under the ministry of education reflect their commitment to environmental education. The discussion was centred on the information that was presented by teachers and students at the college. About two (2) teachers and eight (8) students' teachers were subjected to interviews to gather some data to be presented and analysed for information. The finding was put in thematic themes to help make it simple to be analysed. Document analysis was performed on the curriculum of Wesley College of education, the curriculum for primary and junior high school which helped to throw light on the nature of their environmental education in the country and the dripping effects of what is studied at the university college of education. Bowen (2009) indicates that document analysis is a systematic procedure for reviewing a document which could be in the form of a printed document or electronic as well as cultural artefacts. The findings will basically be based on primary and secondary data.

#### **6.1 DOCUMENT STUDIES**

The document studies were conducted on the curriculum of Wesley College of Education. There have been many curricula drawn to help fix or improve the environmental situation in Ghana. The curriculum was developed in the year 2019 by many stake holders; they are the National Teacher Education Curriculum Framework (NTECF), the National Council for Tertiary Education (NCTE) and the National Teaching Council (NTC) (NaCCA, 2019). This document is important because it highlights the nature of the curriculum for the College of education, more specifically Wesley College of Education. It sheds light on the essential components of the curriculum. The main topic of the thesis is Environmental Education in the Ashanti region of Ghana, a case study of the Wesley College of Education in the Kumasi metropolitan assembly. Alderuccio (2010) affirms that "curriculum changes have always been



crucial for institutional improvement”. The curriculum document was produced to update the old curriculum. Basically, nations seek to improve their curriculum to achieve a set goal with the passage of time. The curriculum could not separate environmental education from other courses of study. The document shows an indication of the need to advance the educational curriculum of the state restructuring several courses. The point of discussion of this document analysis is only to look at the aspect of environmental education which is infused into the various sciences such as biology, physics, chemistry, and agricultural science. Bowen (2009) suggests that document analysis helps to systematically evaluate a document trying to show its advantages and disadvantages. The author adds that it is crucial to specify the author, the context, and the intended audience while analysing a work. There are forty-six (46) university colleges in Ghana. The University of Ghana (UG), Kwame Nkrumah University of Science and Technology (KNUST), University for Development Studies (UDS), University of Education (UEW), and University of Cape Coast (UCC) are the five (5) public universities in Ghana that are affiliated with all of these University Colleges of Education (Atuguba, 2019; NaCCA, 2019). Kwame Nkrumah University of Science and Technology is connected to Wesley College of Education. Since these colleges are affiliated to these universities, they draw their programs for them. Also, I will throw a brief light on the curriculum for the Primary and Junior high school which is titled “Our World and Our People Curriculum for Primary Schools and Junior High” produced by the curriculum department with other stakeholders in collaboration with the colleges of education.

## **6.2 Presentation of Environmental Education Curriculum**

The above theme is developed based on the study of the curriculum for Wesley University College of Education. This was developed by the curriculum developers of the Ghana Education Service (GES) in collaboration with Kwame Nkrumah University of Science and Technology where Wesley College of education is affiliated to (NaCCA, 2019). Meyer (2017. P.18) indicates that the curriculum is “important because of its causal empirical consequences for individual and societal development”. The views of students and tutors were sorted out to help triangulate the research findings. First, the environmental education is fused into the general science curriculum, and it is a four-year curriculum for a degree offer in B.Ed. Education. This comprises of physics, biology, social studies, agricultural science, and chemistry (NaCCA, 2019). As part of the significance of this document analysis it helped to give a fair idea of the nature of the environmental education curriculum for the College of Education. The topic below was developed after going through the curriculum used by Wesley College of Education. There are subtopics as well which help to make it easier for

understanding and brings about clarity of the content of the curriculum. These topics are as follows. 1). A document study, presentation of objectives and content. 2). Integration of environmental education in science teaching 3). Assessment of course in science with environmental education. 4). Presentation of inadequate instructional time for teaching. 5). Presentation of teaching methods. 6). Presentation of pedagogic knowledge. 7). Presentation of supported teaching in the schools. 8) Others, like literacy, studies. Ghanaian the curriculum objectives and content which is studied will be subjected to interviews from the point of view of the following. A. The students' teachers' views, B. The tutors view. The theory of curriculum plays a critical view here as it was able to present the expanded lay out of the context for teaching and learning, it indicated what will be learned, the mode of assessment and finally the methods that will be used to deliver the learning process. The concept of curriculum is standard based sequence of planned activities to be achieved by an institution, as it indicates the teaching and learning process. The concept of curriculum also brings together related concepts to explain or predict a given event. The concept of curriculum is significant here because the document was able to indicate the events that were going to take place that is the objective, methodology, assessment etc. This helped to give a generalization about what is expected of the teacher to teach and what the learner will receive. This goes to confirm what is essential to be contained in a curriculum, as it was able to categorically indicate the systematically pattern to be followed and the detail content of the course. This goes to confirm the strategies and plans to help achieve environmental education.

### **6.3 A Document Study: Presentation of Objectives and Content**

The document study is a study on the curriculum of the school (WCE) looking at the general objectives and its contents. Below are some of the general objectives of the curriculum. The curriculum is designed to prepare teachers who; 1. "Have a passion for teaching and learning, engage with members not only in the school community but also in the wider community, and function as potential agents of change, learners should be able to do critical thinking and be problem solvers" etc (NaCCA, 2019). Some key futures of its goals are 1. "Communicate the basic ideas about the nature and diversity of matter, the use of ICT and map out the interactions between matters and discuss their interconnectivity" etc. (NaCCA, 2019). Scheming through the curriculum I noted specific objectives for the environmental education in the curriculum seeks to address human growth and development. The next aspect of the curriculum that was examined was the content. This was conducted by, going through the curriculum at the content page one sees that the curriculum was divided in to three (3) columns. Each column has some subheadings such as the units, which was indicated with numerals to help number it to help

give identification to it. It also had the topics where it indicated the topics to be taught by the teacher. Examples of some topics which were discovered in relation to environmental education were human and their environment, groups of plants and animals, air, and water, ecological zones in Ghana and food production and implications for socio-economic development (NaCCA, 2019). There were some subtopics which also talked about environmental education such as natural resources and their uses, effects of human activities on the environment, characteristics of leaves, and stem and uses of plants, discussions on ways of conserving water, and finally health, safety, and environmental issues in food production (NaCCA, 2019). It also had teaching and learning activities to achieve learning outcomes. Here it talked about the methodological approaches that will help in the learning process. It also talked about the use of practical measures which helps in the understanding of the topic at stake, like “Nature and types of natural resources in the school environment, discussions on nature and types of natural resources, problem-based teaching on managing land and water resources, as well as video multimedia simulation on effects-on-effects of human activities on land and water resources.” (NaCCA, 2019). It also indicated some measures that will help in the teaching process that is using diagrams, photos, videos, and real objects (NaCCA, 2019).

A critical look at the curriculum revealed that the curriculum planners had structured the course in a theoretical and practical manner.

### ***6.3.1 Discussions of the Environmental Science Curriculum Objectives and Contents***

The environmental education topics are mixed with the science courses, this are social studies, biology, chemistry, physics, geography and agricultural science topics. This means the environmental education did not stand out as a course on its own but was integrated with other courses. A concept of such kind did not really give room for the aspect of environmental education to be covered broadly. The capture of environmental education within the general science course was systematically planned. A comprehensive well-planned curriculum of such kind will facilitate teaching and learning. This will help in the achievement of the learning goals and objectives. Tyler (1957) is of the critical view that the curriculum provides all the learning experiences as planned and that this are directed by institutions to help achieve the educational goals. Therefore, a well-planned curriculum goes a long way to help in the achievement of the objectives of the institution. Meyer (2017) goes further by adding that a well-planned curriculum impacts the society significantly. An example of key future goals of the curriculum says, “Examine the various environmental threats to human growth and development and their implications” (NaCCA, 2019). The objectives of the environmental education were clearly

stated, and this will help when teachers are teaching. A well clearly stated objective is one of the first steps that will facilitate teaching in a class as an objective is the goal intended to be attained. One critical thing that can be seen is the overloading of the curriculum. Whenever courses are overloaded, it makes the teachers and learners unable to complete the course outlines. In such cases, the objectives of the course will not be achieved (McIntyre & Milfont, 2016). The example of the objective indicated above shows the school curriculum has a plan to help overcome environmental threats and help to bring about environmental transformation for the better. The curriculum seeks to find out means that we can use to bring about development and seeks to implement that at the school level to help transform the behaviour of students and the nation (NaCCA, 2019). The concept of curriculum plays a role here as it elaborated on the content and the objective of what the institution seeks to achieve. It was able to elaborate on its objectives and the detail of its content. The concept of curriculum helps to explain what to predict and master.

#### **6.4 Integration of Environmental Education in Science Teaching**

Integration in this study means that the topics of environmental education were not isolated and that it was taught alongside with other courses like biology, chemistry and agricultural science which forms what is known in the curriculum as science (social studies). It is seen that environmental education did not stand out whole as a component course but was blended with the sciences. The interconnectedness of science programs perhaps contributed to the integration of environmental education with the courses. This feature made both theoretical and practical aspects possible so that it could be explained in a context. This will promote easier for understanding. The integration of the courses in such kind did not make the course to be detailed.

##### ***6.4.1 Discussions on Integration of Environmental Education in Science Teaching***

In this 21st century, nations are facing environmental issues that demand more attention (Kelani, 2015). The United Nations Environment Programme (UNEP) in a conference in Stockholm made it categorically clear in 1972 that every nation should promote and develop environmental education programs to help save the environment. (UNEP, 1972). As a result of that, many nations have implemented this policy in their countries to help save the planet.

Ghana as a nation in the global north has implemented such policies in schools with much emphasis to the educational institutions like Wesley College as one of the colleges of education in the country. The college is mandated to help raise public awareness of the global environmental degradation (Atuguba, 2019). Most scholars are of the view that it is important

that subjects are thought in isolation. The teaching of courses in isolation helps teachers to teach effectively which enhances students' understanding. The course was thought as integral part of other science programs. So, this did not foster deeper knowledge in the field of environmental education as teachers and the students will have limited time for it to be covered. Contrary to this, is the viewpoint of Kelani (2015 P.2) on environmental education. He pointed out by identifying four (4) "broad approaches and techniques that are being used to incorporate Environmental Education into schools, and more specifically the curriculum. These include infusion, imposition, insertion, and framing. The infusion is the putting in of concepts and other activities in curricular goals. The Imposition refers to levying environmental topics within the curriculum. The Insertion is the inclusion of environmental programs to the curriculum. The Framing refers to, doing away with traditional course disciplines and rather integration subject areas". Integration helps in transfer of knowledge as there are synergies in many fields of operation. Therefore, many educational courses and topics are built on and expanded in the future to know the basis of course or topic. Moreover, this will help to explain things better to the student (Jančič, & Hus, 2019). Costley (2015) adds that integrated curriculum helps to bring about student centred approaches and this helps to increase student interest. Both the theoretical and practical approaches of the course will increase knowledge assimilation when there is integration. Furthermore, the integration of course with other course makes the subject course to have limited amount of time allocation. In this regard, it will lead to ineffective transfer of knowledge since not much of the course will be covered (Bregman & Fisher, 1999). Bregman & Fisher (1999) opine that environmental education can be taught as a more distinct subject with an allocated instructional time, or it can be infused with other subjects. They make it emphatically clear that when it is separated it will be associated with some difficulties such as cost. Therefore, it is prudent when the subject is infused with other subjects to make it hugely acceptable. Also, it's very difficult for student teachers to claim that they are experts in a field like environmental education. Although, they may have some amount of knowledge in the said field, substantial contact hours will be required to build the competency skills of an individual. The integration of the curriculum connects diverse areas of study. This is done by cutting across subject matter lines to emphasize unifying concepts of study as well as bringing about interconnectivity (Costley, 2015). Also, it will ensure higher sense of retentions to improve their grades because they are more closely linked to content for real world experience. (Costley, 2015). The theory of environmental knowledge and attitude plays a significant role here as it tries to indicate the knowledge that is needed to help bring about a change in the citizenry; it also indicated how the knowledge is blend with other subjects. It was also able to indicate the

attitudinal change that will be expected to achieve as it seeks to bring about an attitudinal change in the life of the learners. It also seeks to expand the knowledge content of the learners. Furthermore, the concept of curriculum can also play a key role as it was able to talk about how the course should be designed as it talks about the strategically methods of designing the course. This theory justifies the significances of knowledge content in environmental education which will help to minimize the situational condition of environmental problems in Ghana.

### **6.5 Assessment of Course in Science with Environmental Education**

In the context of this study, Assessment is the process by which a teacher evaluates a student to find out the knowledge understanding of the course that has been thought. A critical look at the document reveals that the Assessment procedures are put into two folds with a percentage of 40% and 60% respectively (NaCCA, 2019). It revealed that the continuous assessment was 40% and the end of semester was 60% (NaCCA, 2019). The 60% assessment is conducted by the external standardized body that has been mandated to take charge by their affiliation to the universities (NaCCA, 2019). The Assessment format is applied of, for and as learning. It is also classified into two categories that are formative assessment and summative assessment. The formative was sub divided into two components assessing group presentation, student teacher reflective notes and quiz (NaCCA, 2019). The summative was the end of semester project. In the case of Wesley College of Education, the department of education in Kwame Nkrumah University of science and technology oversees that duty. It also indicated that students pursuing a 4-year bachelor program should have a minimum credit range of 120 to 140 (NaCCA, 2019). It also indicated that students must have a semester credit of 21 to 24 (NaCCA, 2019). It also indicated some number of credits to be thought at the primary and junior high school.

#### ***6.5.1 Discussion on Assessment of Course in Science with Environmental Education***

Assessments are the procedures utilised to evaluate students' performances. The assessment is used to categorically state the measuring methods of evaluation of the students. It talks about the use of quizzes, class assignments as well as exams as one of the measuring methods of evaluating the students (NaCCA, 2019). The curriculum was not able to indicate the practical measures for the evaluation which is of immense importance. The use of assessment is an exceptionally good measure to see how the students have understood the course and how it will be implemented. Assessment is the procedural process by which a student is evaluated to see how the student has understood the context, it measures improvement within a time space, as a means of motivation, helps to range students and also to evaluate the teachers teaching methods (NaCCA, 2019). Partlow and Gibbs (2003) indicate the function of assessment as;

“capturing student’s time and attention, generating appropriate students time and attention, generating appropriate student learning activity, providing timely feedback which students pay attention to, helping students to internalize the discipline standards and notion of equality”. Assessment at generating marks or grades which distinguish between students based on criteria for either pass or fail. Essentially, they serve as sources of evidence for others outside the course to assess the appropriateness of standards on the course. The formulators of the curriculum suggest that the assessment is utilised to promote learning outcomes. Typically, this will be helpful in recognising the strength and weaknesses of learners to improve their instructional strategies (NaCCA, 2019). Alderuccio (2010) points out that it’s not only developing a curriculum but it’s very important that we pay attention to how they are implemented. The assessment process which was used in the evaluation was both formative and summative. The formative assessment is viewed in terms of assessment as learning which occurs both before and during learning process (NaCCA, 2019). Assessment as learning is the engagement of learners to reflect on the expectation of their learning. Basically, this approach helps to monitor learners’ progress and achievement (NaCCA, 2019). The summative assessment is specifically about what learners know and what they can do within a period. Significantly, this is to evaluate learners cumulative progress and achievement. It occurs at key segment in a learning cycle or the end of the learning process (NaCCA, 2019). Popham (2011, P.14) indicates that formative assessment is gathering and analysing assessment to elicit evidence for the purpose of determining when and how to adjust instructional activities or learning tactics to achieve learning goals. The assessment processes talk about indicators and strands which are set. There was allocation of time for the learning process through which learners will be assessed. The theory of curriculum come in to play here as the curriculum was able to talk about the process of evaluation and assessment of the course as it was able to emphatically indicate the time to be spent in the teaching and learning process. It also suits well as the concept was able to show the indicators expected. The theory of critical pedagogy also comes in to use here as it was also able to indicate the roles that learners can play. Provision was given to the learners in much respect as it never abounded the learners as Tabula Rasta and sort to initiate learners in knowledge discussions. It also accentuates the reasons why environmental education is needed to be studied as it embraces all to put their ideas in to action.

### **6.6 Presentation of Inadequate Instructional Time for Teaching**

On the instructional time allocation, the environmental education aspect was allocated a time of 3, 3, 3 in the curriculum (NaCCA, 2019).

### **6.6.1 Discussion of Inadequate Instructional Time for Teaching**

Allocation of time in a curriculum is important, as it shows the time portioned for that study. When a program is allocated more time, it gives room for the learners to have more contact hours for studies. This will enable students to learn more and help to replicate that to the outside world or implement what they have learned. The more time spent to produce something; it comes out with quality or quantity in production or reflection. It is in this reflection that much time needs to be spent in students learning (NaCCA, 2019). Findings from Figlio (1999) research on United States High school students show that time allocated to studies in school comes with a positive correlation in academic achievement. Marcotte (2017) also adds that a greater snow accumulation with the increase in time for studies and that less time in schools results in lower score by students. Coupled with the small number allocated for the environmental studies, I see that it is going to be difficult to cover much of the topics (Borg (1980). Brown and Saks (1986) indicate that when students spend more time in learning it brings about higher academic outcomes.

## **6.7 PRESENTATION OF TEACHING METHODS**

The curriculum indicates that the application of a teaching method is depended on the topic and subject. Regarding the sciences where environmental education is infused in the teaching method, it is both Learner centred and teacher centred approaches (NaCCA, 2019). A critical look at it shows that the learner centred approach comes before the teacher centred approach.

### **6.7.1 DISCUSSIONS OF TEACHING METHOD**

The curriculum illustrates two (2) teaching methods in the teaching of environmental education of which one is the learner centred approach. This method helps to contribute to the learning process in the class as the learner or student is given the right to be the driver in the learning process (NaCCA, 2019). According to Freire and Macebo (2005), a student teacher performs best when they have solid subject and methods expertise in order to become effective teachers. A modern professional teacher should be educated in both material and approach, according to Freire. This approach helps the student to develop a critical thinking hence contributing to the creativity of the student. It also ensures that the student is not a passive listener in class since he or she actively engages in the learning processes. Svendsen *et al.*, (2020) indicates that activity methods help to address the gap between theory and practice and refers to Vygotsky concept of activity theory. I think it is a vital method which should be encouraged in class activities. This is because the learner gets more opportunity to learn more, since they are given the privilege to discuss and digest all that is thrown at them. This teaching method helps to contribute massively to the creativity of the students. It also prepares students to conduct more



research since they are given the centre seat and really need to discuss more (Vygotsky, 1978). It also makes the students not to see themselves as the tabula Rasta. Another approach is the teacher centred approach; this is a strategy where the teacher is in complete control of the class (NaCCA, 2019). This approach is not a particularly good strategy for the student teacher. Since the student teachers are developing themselves to be instructors, there is the need to provide them the privilege to ask and experiment in many ways to help clear their thoughts. This approach will not contribute to the self-development of the individual therefore I advocate for a learner centred approach as contained in the theory of critical pedagogy.

### **6.7.2 PRESENTATION OF PEDAGOGIC KNOWLEDGE**

Under this theme it puts pedagogic knowledge as General pedagogic knowledge (GPK). Freire and Macebo (2005) indicates that it is important for a professional teacher to have a mastery of the content to teach. The methodological approach to impact students for insightful teaching in a learning environment. It indicates the instructional strategies to be used to help give general assessment to support the differentiation of learning abilities of the heterogeneous nature of pupils (NaCCA, 2019). It also talks about the barriers to learning processes in the life of the student. It speaks about the effective mechanism for planning of the classroom as well as the behaviour management strategies of students (NaCCA, 2019). Also, it indicates the preparation for supported teaching in school and mechanism as well as the learners' backgrounds (NaCCA, 2019). Furthermore, it points out the use of classroom enquiry and reflection (action research) as well as building a portfolio as a teacher (NaCCA, 2019). It also emphasises some cross cutting issue about professional values, attitudes, transferable skills, and equity and gender perspective. It also looks at issues from philosophy, history, and sociology of education in its reflection on barriers to learning, motivation and their influence in instructional design (NaCCA, 2019).

### **6.7.3 DISCUSSION OF PEDAGOGIC KNOWLEDGE**

The building of learner's intellectual ability is the main priority of the teacher. The teacher seeks to develop the learners in a holistic manner. This is done by trying to develop his or her environment, develop the financial situation of the learner in the future so that it can contribute to the development of the global world. It is important to know that the curriculum made room for the application of various instruction strategies to help build and transform the intellectual ability of the student (NaCCA, 2019). This is important because it addresses the heterogeneous nature of the learner thereby creating room for their own developmental milestones. It is also important to recognise that the curriculum makes room for the various barriers that will impede

their growth. Alderuccio (2010) says that knowing the problem is a first step in overcoming the situation at hand. This therefore means that the curriculum which creates room for the barriers and laps in the life of the individual student is therefore helping to overcome the problem at hand. I however do not see typical examples of the various kinds of barriers that it talks about. Expectedly the curriculum should mention examples of such kinds and help to provide solutions to them. Children are the future leaders of the world; however, they must be trained to groom them for the future. The curriculum makes room for classroom management as well as background checks. I think it is important, however the problem is whether that is carefully followed or it's just a formality. Alderuccio (2010) makes a point by saying that the implementation of the curriculum is the most important thing to look at.

It also talks about a reflective writing; this is an exceptionally good strategy as it helps the student to convey their own thought process. It also suggests that the student teachers must build their teaching portfolio which is a very laudable thing to do. This highlights the various philosophies that they apply, as this helps them to be able to evaluate and reflect on their teaching process (NaCCA, 2019). In this chapter, most of the theories fit in its application that is the theory of critical pedagogy, the theory of environmental knowledge and attitude and lastly the concept of curriculum. Critical pedagogy elaborates the knowledge content of the students, teachers and the citizenry. It also seeks to emphasise that there is the need for all the parties to show love to what they believe is the best and advocate for its success as this can contribute to the growth of the society. The theory of environmental knowledge and attitude seeks to see the knowledge content of giving awareness which cumulatively can help to bring about a change. In line with this it was able to indicate the knowledge needed to be passing on to generation to generation. As the concept of curriculum was able to indicate it's lay out for environmental education and how to achieve it.

#### **6.7.4 PRESENTATION OF SUPPORTED TEACHING IN THE SCHOOLS**

Under this theme, there are talks about the partnership and reflective practice with support from mentors and tutors. It presents the methods of having a field experience, with the focus in developing skills of observing, planning, teaching, and assessing their impact on pupils learning progress (NaCCA, 2019). It then advocates for internship reflective practice and action research. It also talks about the application of instructional skills earned at the school to be transferred to the lower schools like junior high and the primary school (NaCCA, 2019).

### **6.7.5 DISCUSSION ON PRESENTATION OF SUPPORTED TEACHING IN THE SCHOOLS**

This presents reflective practice where the mentee who is the student teacher is coached by a mentor in a school. This means that he is assigned to go and learn from him or her to gain some experience in the field. I think this is highly commendable as the student teachers will gain more knowledge from this practice. In all this, the time factor to undertake a reflective practice is important as this will contribute massively to the gain of knowledge. The theory of Critical pedagogy come into play here as the student teacher is not seen as an empty vessel but is given the opportunity to observe, plan and teach. This act gives the student teacher an opportunity to explore critically about issues and to be able to analysis situations analytically. The internship reflective practice it's also an opportunity for the student teacher to see him or herself as not Tabula Rasta, since the student teacher is given an opportunity to analysis situation and suggest for improvement. The student teacher is also allowed to apply his or her instructional skills at institutions that he or she finds herself and therefore take the opportunity to have an opportunity to experiment what he or she has been thought.

### ***6.7.6 Others Like Literacy Studies, Ghanaian Language and English***

There are other views in the curriculum that do not talk about environmental education but are equally important to this study. This is because the concept of the education is to help transform the world for the best. The curriculum is of the view that Ghanaian languages and English should be used to help build proficiency in communication. It reiterates that L1 should be used as a medium of communication to teach KG/ P3 to help students to transition from L1 to L2 (NaCCA, 2019). It adds that the use of L2 as medium of communication from P4 to JHS 3 onwards. It also comments about the use of the 4 skills of language, which is reading, writing, speaking, and listening at the lower class (NaCCA, 2019).

### ***6.7.7 Discussion of Literacy Studies, Ghanaian Language and English***

It mentions the use of local language (L1) for the teaching of kids in KG to P3. I think this is a very laudable move since the kids at that age may not have developed themselves well enough. Therefore, the use of the local language will help contribute to the building up of the knowledge of the student (NaCCA, 2019). I also think that the use of the L1 will help them to understand the concept environmental education very well since they can understand issues very well in their local language well at that age. It is also very important to know that it also took into consideration the gender perspective as well. In this case, by trying to bring on board about how to help develop the mind-set of all Ghanaians so that everyone can contribute to the sustainability of the climate.

### **6.7.8 CONCLUSION**

This study investigated the following in Wesley College of Education curriculum objectives:

a. Have a passion for teaching and learning, be able to reflect on their practise, interact with people in both the school community and the larger community, and act as potential change agents. b. Recognize the learning objectives of the subjects they teach and be able to use evaluation to aid learning, as well as to spot learning obstacles and false notions about learning. c. Enhance communication, problem-solving skills, and critical thinking through the learning environment they design (NaCCA, 2019). This will be in collaboration with my individual research that I am conducting to find out more about the environmental education in Ashanti region of Ghana, particularly with the Wesley College of Education in the Kumasi Metropolitan Assembly in fulfilment of my master thesis. Finally, I will give evidence of summary of my study.

### **6.8 WHY THE NEW CURRICULUM**

Aboagye and Yawson (2020) indicate that the new curriculum for the educational institutions was implemented in September 2019 and that the new curriculum seeks to address the challenges in the old curriculum and this include content overload, objective based limitation as well as failure in assessment system. Additionally, it seeks to “improve acquisition of reading, writing, arithmetic and creativity skills”. Also the new curriculum has come with the introduction of the history of Ghana, French language and physical education. Furthermore, it focuses on learner-centred approach and also seeks to bring technological development by the use of ICT as a tool for pedagogy. Lastly it seeks to reverse the old way of memorizing facts but rather to understand a fact and ask learners to do personal projects, community project or service.

### **6.9 Introduction / the Kg Curriculum / Structure / Content / Objective / Indication / Indicator and Exemplars**

It was put into strand: which is divided into sub-strand.

Time will not permit me to go through all the curriculum of the primary and the Junior Secondary School curriculum fully. I will look at the various stages and see how environmental education that is thought in the college of education transcends to the various stages that they are supposed to implement it. A look at the kindergarten curriculum. A critical look at the

curriculum for the KG1 and 2 indicates that it has a major element known as strand. This is the main or major topic to be covered consisting of elements such as sub-strand, indicators and exemplars, reference, and core competencies (NaCCA, 2019).

### **6.9.1 DISCUSSION**

A critical look at the curriculum indicates that the curriculum is well structured and planned. It also indicates that even at the KG level, students learn something about the environment. One of the topics that are covered was “my environment and my health” (NaCCA, 2019). This is a clear indication that the curriculum has something to do with environmental education. One element which is named as sub-strand. For example, k1.1.5.1 has objectives as” to demonstrate understanding of how keeping our home and environment clean can keep us healthy and strong”. With these indicators they seek to find out how learners can achieve the objective. For example, k1.1.51.1 indicates that they should “talk about how we can keep our environment clean to avoid getting sick. Under the core competencies, it indicates the competencies that will be achieved like, communication and collaboration, personal development and leadership, critical thinking, and innovation as well as creativity (NaCCA, 2019).

### **6.10 THE CURRICULUM OF JUNIOR HIGH SCHOOL (JHS)**

The curriculum of the JHS is called the social studies. The curriculum of the JHS is supposed to be covered in three years; each year is categorised into three units. The first chapter is devoted to the environment, including issues such teenage reproductive health, the environment, and environmental challenges (NaCCA, 2019). The second year also has three sections which are also classified as section 1 with the title as environment with some sub section as our culture, mapping our environment and our country Ghana. The last year is likewise separated into three sections, one of which is titled "environment," including themes like Ghana's demographic advancement as well as natural characteristics and their significance to the planet. Another component under the third year is divided into issues with Ghanaian development, national development that is sustainable, and youth and discipline (NaCCA, 2019).

The curriculum is divided in to five sections. The first section is called unit, under this unit we have the topic to be treated such as the environment and environmental problems. It also has a problem statement of the topic such as “knowledge of the value of the environment and how to sustain it is vital for the continued existence of humanity. Environment degradation is one of the key problems confronting Ghana today” (NaCCA, 2019). The student will be able to

describe what the terms "environment" and "environmental components" mean, according to the second section's specific objectives. The third section is the content, which provides the topic's specific substance. The teaching and learning activities are covered in the fourth part. For instance, students can discuss the physical and social environments and illustrate how each influences the other. In the final phase, the student is evaluated by way of a question.

## **DISCUSSIONS**

The curriculum of the JHS has environmental studies in the curriculum with the name called social studies. There are many environmental studies in its content. It has a topic in the first year as the environment and environmental problems, here it defines the environment in relation to our social and physical surrounding, and indicate that the environment means everything around us. It continues to indicate that the environment is made up of natural and manmade things. The curriculum was able to categorically indicate the components of the environment as the air, the trees, the land, rocks, water bodies etc. It also classified the environment into two groups the physical environment as the surroundings within which man, animals and plant live and the social environment as the interpersonal relationship that exists in a given community. It also indicates the relationship between the physical and social environment as being dependent on each other.

It also talks about environmental degradation, here it talks about the types of environmental degradation and classifies it in relation to air pollution, water pollution and land degradation. It also talks about the causes of environmental degradation and its effects to the environment. It also talks about ways of controlling environmental pollution.

The second year has a topic in environmental studies as mapping our environment; here it also talks about the mapping of the various regional environments and classifying it in relations to what the various regional environments has, such as the rivers, dams, lakes rainfall pattern etc. It also talks about the relief features in the country, talking about the importance of mountains and highlands as well as the importance of water bodies in the country. It also talks about why it is not a good practice to cut trees near water bodies as well as building close to water bodies. Furthermore, it talks about the two seasons in Ghana as well as the benefits of rainfall. It also classifies the types of vegetation in Ghana and their characteristics.

The third year also talks about the significance of some natural features of the earth. It also talks about the solar system consisting of the sun and the nine planets as well as the eclipse. There is also a sub topic as the types of rocks and their characteristic as well as the importance of rocks.

The theory of environmental knowledge and attitude come in to play here as the developers of the curriculum thought it wise to reflect that to the junior high school. Here it seeks to develop the knowledge base of the students so that they can have some knowledge about the environment. The content of their topics clearly indicates the knowledge that is pass on to students. This helped the research to see the dripping effects of what is studied at Wesley College of Education to other institutions where their services will be needed.

## **CHAPTER SEVEN**

### **PRESENTATION OF FINDINGS**

#### **7.0 INTRODUCTION**

This chapter presents the main findings of the study. It presents the background of the respondents. In relations to the objectives, the chapter was put into three (3) sections. Each had some sub themes to help bring about clarity and understanding. This is to highlight the understanding of the interviewees point of views in relation to the objectives specified above.

This chapter explicitly brings out the point of view of the informants who took part in a visit for interviews as well as observation undertaken through the lens. The informants were put into a group of two, which are the teachers and teacher trainees to express their views about environmental education in the college. Below are the symbols for representation of the interviewees.

Let TR- College Teacher: TR1 and TR2,

Let ST- Student Teacher: ST1, ST2, ST3, ST4, ST5, ST6, ST7 and ST8

Let FST: Student in focus group and

Let FTR: Teacher in focus group

#### ***7.1.0 The Main Content of Environmental Education in Wesley College Of Education***

This study presents the main content of environmental education in Wesley College of Education in the perspective of the teacher trainee and teachers view. It looks at the curriculum content and its relations to the local community and the country at large as well as the roles to play, to help achieve the goals and objectives of the curriculum. It also looks at the teaching methods that are used in the classroom about environmental education. Find below some subthemes that were developed.

#### ***7.1.1 The Curriculum of your Environmental Education***

The respondents explained that the curriculum is broad and that it covers the physical environment showing the interrelationship between both human factors and natural factors. About three-fourth of the respondents were of the view that the curriculum is overly broad and one-fourth where of the view that the curriculum is standard and less than one-fourth indicated their view that the curriculum was below standard. Also, the curriculum seeks to nature students



to have skills to address environmental related challenges, as well as training students to know the positive and negative impact on the environment. They further indicated that the environmental education also explores environmental challenges and trains the citizenry to be analytical; it also indicates how to manage behaviour and the ecosystems so that it can help in environmental sustainability. This is contained in a statement by ST2 that “The curriculum of the environmental education focuses on how to develop necessary skills and expertise to address environment related challenges”. ST4 is of the view that the “curriculum is not broad and thus not equips them very well in environmental knowledge to be much competitive as compared to other degree students who study environmental studies or science”.

### ***7.1.2 How Relevant is the Content of Environmental Education of your Curriculum to your Country and Local Community?***

The respondents explained that the curriculum helps individuals to explore environmental challenges, develop analytical lens to conserve biodiversity, awareness creation, and train citizenry to use their resources judiciously, community connectivity.

They further indicated that environmental education advocate for a sense of unity with the environment through community involvement. This is because environmental problems are not limited to an individual but all individuals that are living in the local community and the global world as well. They further suggested that it creates public awareness and helps the locality to control their resources and to adapt to the environmental challenges that they are facing. More than three-fourth interviewees indicated their view as such but less than one-fourth indicated a different view about the significance of the environmental education. This is contained in the statement of respondent. According to ST1, the goal is "to assist people, investigate environmental issues, engage in a challenge, and initiate actions to enhance the environment". However, ST3 has a different view, and narrates the environmental challenges they are facing has been long and expected a change, “Why are we not having a change in the environmental challenges that we are facing, people are still doing “galamsey”, a local name for gold mining and most water bodies are polluted, go and look at river “Offin”, you cannot drink from it. I don’t see any significance of the content of environmental education to the citizenry”.

### ***7.1.3 What do you Think Could Be Done to Help Achieve the Goals and Objectives of the Course, Environmental Education as Well as the Curriculum?***

The respondents are of the view that it’s important the goals and objectives are achieved; they are of the view that the curriculum should be followed strictly so that it can be covered; they also indicated that the goals and objective are very broad and needs to be limited. Respondent ST1 indicates that “the objectives of the curriculum should be made simple”. They also say

that the objects of the course should be limited to the local community for better understanding, as this will help to solve the local problems that they are facing.

They also indicated that teaching methods should be made explicitly clear to help in better understanding and to relate it to the immediate environment. They are of the view that it would serve them good if the teachers have speciality in environmental education.

#### **7.1.4 WHAT DOES THE ENVIRONMENTAL EDUCATION MEAN TO YOU?**

Respondents explain that the environment is all that we have and needs to be cared for; they explained that the environment has changed in the past years. They explained what is contained in the environment and talked about the significance of maintaining the environment. ST1 and ST2 are also of the critical view that environmental education includes all the components and aspects which are related with the existence of men and the world and further indicate that water, air and land constitute the totality of what the environment contain. They indicated that environmental education creates awareness, develop knowledge about the environment and through that it develops a sense of preserve, conserve and wise utilization of the resources in the environment so that it can bring about environmental sustainability. ST1 indicates his view about the environmental education as “the environmental education includes all the components and aspects which are related with the existence of men and the world. As the air, water and land constitute the environment. Environmental education discusses in detail about men’s activities in these three areas, thus encompasses all the resources”.

Some of the respondents are of the view that environmental education covers cognitive, psychomotor and affective domain of teaching and learning. The significant aim of environmental education is awareness, attitudinal change and cultivation the attitude of sustainability.

#### **7.1.5 WHAT IS ENVIRONMENTAL EDUCATION AND HOW IMPORTANT IS IT?**

The respondents explained that the environment is all that we have, and that environmental education instils into individuals the significance of having knowledge about the environment as well as educate them on measures to protect the environment. They are of the view that environmental education provides enormous opportunities as it provides the individual opportunities to acquire the knowledge, values, attitudes, commitment and skills that will help contribute to environmental sustainability. They also indicated that environmental education

helps to create awareness of what we have in the environment and the deteriorating effects that the world is witnessing and what to do to overcome the situation. They further indicate that environmental education is the knowledge about the environment whereby individuals are briefed about the importance, how to conserve it and the effects that will be witness when the environment is deteriorated. A respondent ST1 indicates his view that “Every person has the opportunity to learn the knowledge, beliefs, attitudes, dedication, and skills necessary to conserve and improve the environment through environmental science.” More than threefourth of the respondents are of the view that environmental education is very significant but less than one-fourth has a view that the world revolves and as such the climatic changes that we are witnessing now is not strange and that seasons revolves. The view of ST3 indicates that “this is not the first time that we are witnessing climate change, it has happened before”.

#### ***7.1.6 What Teaching Methods is Employed in Teaching Environmental Education***

The respondents indicated that various kinds of teaching approaches are applied in the teaching process of environmental education. They are of the view that the tutors use project methods, presentation methods, demonstration methods as well as many approaches in their teaching approach. They also indicated that a demonstration approach was also used since they will be posted to their various schools after their completion of their certificate. This is indicated by ST1 as “they use project methods, discussion methods and presentation methods, demonstration methods and fieldtrip’s”.

All the respondents were of the view that the approaches used in teaching environmental education was very satisfactory to them and that they will use the same methods to teach students that the come in contact to.

## **7.2. THE RELEVANCE AND UNIQUENESS OF THE ENVIRONMENTAL EDUCATION IN WESLEY COLLEGE OF EDUCATION-MAIN THEME**

This section highlighted the respondent’s perspective on the relevance and uniqueness of environmental education in Wesley College of Education. It Talks about how tutors prepare students to teach environmental education, how relevant are the teaching methods that are used in the teaching process in environmental education and the processes by which students are adequately resourced. This section has some sub section that was developed from the major theme find it below.

### ***7.2.1 How do Tutors Prepare you as a Student Teacher to Teach Environmental Education at Your Junior and Senior High School?***

The respondents show the practical approaches and teaching strategies such as discussions methods, demonstration method, project method, as well as seminars as some of the ways to prepare student teachers to prepare them for the field of impartation of environmental education. Almost all the respondents are of the view that they were satisfied with the teaching methods. Also, they indicate that tutors use practical approaches to explain the concept and indicate that this practical approach helps them to see the real-life situation of events.

Furthermore, they also indicated that tutors prepare them adequately through teaching assignments and other various teaching and learning activities which give them many insights about the teaching profession. They also indicated that they are made to plan a scheme and taught how to prepare lesson notes. The views of ST1 and ST2 are indicated below ST1 “our tutors use practical approaches to explain the concept and bring it to real life situation so as we will be able to nurture our learners regarding the relevance of keeping our surroundings clean”.

ST2 “they prepare us through their teaching assignments and the various teaching and learning activities and the teaching on how to prepare teaching and learning resources”.

### **7.2.2 HOW RELEVANT ARE THE METHODS USED TO TEACH ENVIRONMENTAL EDUCATION?**

The respondents indicate the relevance of the teaching methods that are used by the tutors as follows. Some of them are of the view that discussion and demonstration method has helped them to be creative and innovative and this has helped them to be able to engage much in the day-to-day learning process in the school. Some were also of the view that they engaged them with presentation methods which create a learning process which helps to build in them some confidence in their learning process. This is also shared by **ST1** “the use of discussion and demonstration method helps me to create innovative ideas and engage much in the lesson as well as the use of presentation method will help me to develop confidence to share my ideas and have the zeal in teaching”.

They also indicate that this learning and activity process helps them to explore some environmental issues, as it also helps them to be problem solvers in environmental problems.

### ***7.2.3 How Can Students Be Adequately Resourced to Appropriate Teaching Methods In Environmental Education in the Teaching and Learning Process?***

The respondents indicate how students can be adequately resourced to appropriate teaching methods in environmental education in the instructional periods as; ST1 and ST2 are of the view that it’s very paramount that students resource themselves by reading extensively so as to

abreast themselves with the modern approaches and technicalities in helping to reduce environmental pollution. They are also of the view that, day in and out researchers are made to find out the best approaches and systems that can help enormously in changing environmental pollution for the better. They also retroacted that the teachers should add research work to the learners' study program so that they will know what strategy can suit them better. They were of the view that it is paramount that teachers use technological tools in their discharge of their teaching and learning processes. Furthermore, they indicated that there should be a student led classroom and that this helps more in the assimilation of knowledge. They also indicated that interactive lessons help to bring out the creativity in students as well as the teachers. This is confirmed by ST2 "tutors should implement technology in the classroom by using tablets and laptops in the classroom, teachers can introduce interactive lessons. Also, there should be student-led classroom. Student classroom have become a creative way for teachers and student to interact and carry out discussion in the class". ST3 also indicated that the school also needs building for the department and that that will go a long way to help in the development of the department. He also indicated that suitable buildings and facilities for the department will also go a long way to help to host other environmental programs in the school which will also help students to participate effectively and acquire knowledge.

TR1 also narrated that the use of technological tools has gone a long way to help in their teaching and learning process and that the school now has internet where students are able to brows to research in academic work. He indicated that the use of these technological tools is helping enormously since this day's technology has become a giant to knowledge acquisition.

### **7.3. THE EXTENT TO WHICH ENVIRONMENTAL EDUCATION IS EMPHASIZED IN THE COLLEGE OF EDUCATION**

This section looks at the magnitude of how environmental education is portrayed in Wesley College of Education. It delves to the extend by finding out the aim of the program of environmental education, the modes of assessment of the program, a look at some modifications in the curriculum, the teaching strategies that are applied and finally how awareness creation are tied in relation to the local and global concepts. It has some sub themes such as, what are the aim of the program of environmental education in this college, what are the modes of assessment of your environmental education program, do you think you have identified some modifications in the curriculum, what teaching strategies or improvement materials are used to

emphasize the teaching of environmental subject, are your environmental education and awareness creation closely tied to broader environmental issues.

### **7.3.1 WHAT ARE THE AIMS OF THE PROGRAM OF ENVIRONMENTAL EDUCATION IN THIS COLLEGE?**

The respondents indicate the aims and significances of the program by indicating that environmental education helps in the impaction the citizenry with the knowledge of environmental education and goes on to indicate its contribution to environmental sustainability. They also indicated that getting knowledge in environmental education will help inform the citizenry about the significance of environmental conservation and measures that can be put across to contribute to environmental sustainability. It was also indicated by the respondents that the aim of the program is steered towards the primary, junior high as well as the senior secondary. The aim of the program is to give an early knowledge to the basic and secondary education the aim to contribute to environmental sustainability and ways to do that.

ST1 indicates the aim of the program as “we are thought to go to the primary, junior high and senior high schools to implement what we have studied about environmental education. This is to instil into the citizenry knowledge and awareness of environmental degradation and global climatic changes. We also put this into practice were ever we find our self, look at how clean our school environment is and how green it is”.

Almost all the students agree that the course is of great significance to the management of the environmental and crises that the country is battering with the sustainability of the environment. But one of the students differs in that regards and indicates his view as related to the need to create wealth for some few, and that environmental crises is permanent and not detrimental and that seasons revolve with years, hence what we are experiencing.

### **7.3.2 HOW MANY PERIODS OR COURSE HOURS ARE ALLOCATED TO THIS PROGRAM? EXPLAIN WITH REASONS?**

The respondents indicated the time allocated to the teaching of environmental education in the college. They are of the view that at a particular section during the studies of environmental education, three hours are allocated as contact hours for studies. They further narrated that they are given five periods in a week where students are impacted meaningful about environmental education. They were of the critical view that the hours allocated in the studies of environmental education were limited and it will serve them good if the contact hours were increased. The views of ST1 and ST3 indicates that the environmental education was infused into the social

studies program and advocated that it been separated from the other courses. This is indicated by ST3 as “ the environmental education periods are infused with the social studies lectures which make it difficult to know the exact hours that are allocated for its teaching, but I think we will use about 3 hours in a week. I also believe that it’s better if the institution runs a full course which solely environmental education”.

Almost all the respondents are of the view that the allocated periods for environmental education was limited and advocated for more.

### **7.3.3 WHAT ARE THE MODES OF ASSESSMENT OF YOUR ENVIRONMENTAL EDUCATION PROGRAM?**

The respondents explained that educational assessment is very important in every educational institution, as it helps to evaluate the goals and objectives that are set by that institution. They also retreat that assessment helps to know what the learners have achieved. They further go on to indicate some of the assessment as project works, Midterm exams, quizzes as well as semester exams. They further indicated that they run educational trips and students are assessed at this various trip that they undertake and that these trips help them to see theoretical things that they study and reflect. At these practical fields students are also assessed to find out what they have studied at the school. Respondent TR1 indicates some of the modes of assessments as “ the mode of assessment of the students in environmental education are through project work, midterm exams, quizzes, and end of semester exams”.

### **7.3.4 DO YOU THINK YOU HAVE IDENTIFIED SOME MODIFICATIONS IN THE CURRICULUM, IF YES WHAT IS YOUR PERSPECTIVE ABOUT THAT?**

The respondents explained that there have been some modifications in the curriculum and indicates that demonstration method, learner centred, and innovative technologies has been implemented in the curriculum of the college. The respondents are of the view that curriculum modification is very paramount to every educational institution and indicate that Wesley College of Education been an institution that seeks to address and improve the situational conditions of a country has continuously brought about modifications in its curriculum. Furthermore, they also indicated that the approaches to the learning process have been changed from a teacher centred to a learner centred process and that the teaching process has now become a practical oriented approach.

Respondents TR1 and TR2 espoused their views as follows, ‘‘I have been teaching at the college for some years now, there has been tremendous change in the curriculum; it’s now changed to demonstrational approach and its student centred’’.

### ***7.3.5 What Teaching Strategies or Improvement Materials are Used to Emphasize the Teaching of the Environmental Education Subject?***

The respondents are of the view that the teaching strategies and modern technological technology have gone a long way to impact students meaningful. Informant TR1 and TR2 explains that the teachers now use technological tools to advance the course of the learning process and that these technological advances have gone a long way to impact students meaningful. They also indicated that the use of appropriate instructional and learning materials, has gone a long way to help in the understanding of the teaching and learning process and that this will go a long way to help them reciprocate it to schools that they will be posted. TR2 ‘‘we are now asked to make good use of teaching learning materials to help learners understand the learning process better so that they can carry it to the field’’

TR2 further indicates that learners are also put into groups where they undertake group discussions and that these group discussions will go a long way to help each other to learn from one another.

Furthermore, respondent ST3 narrates some of the practical measures that have been inculcated to the student body as results of environmental education attributed because of the teaching content and teaching processes. He further indicates the significance of recycling of waste, by indicating that it goes a long way to impact them meaningful by helping to contribute some money to the institution. This narrative has been confirmed by respondent ST4 ‘‘ we sort waste products at the school, so that the products are recycled to help reduce environmental waste. We were told the significance of recycling of waste and that now waste is money. We always do discussion with the teachers to find out the best approach. We are not forced to do something, but we discuss the importance of recycling something’’.

### **7.3.6 ARE YOUR ENVIRONMENTAL EDUCATION AND AWEARNESS CREATION CLOSELY TIED TO BROADER ENVIRONMENTAL ISSUES?**

The respondents explained that environmental consequences of a local community are tied to the global community. Informant TR1 explained that teaching and learning is focused on the premise of what students know to the unknown knowledge hence the teacher draws the student’s perspective to their local environment and educate them about the implication to the global perspective. Informant TR2 added that the effect of a local community has a consequence to the broader perspective, hence students are told that the world is interconnected



hence the need to treat the environment with decorum. From this perspective, other informants such as ST1 and ST2 revealed that the school as a community has in place programs to effect positively environmental issues the world is facing. The programs include tree planting in the school environment, and public education. ST2 “the school has planted many trees in the compound of the school to serve as a means of keeping the compound green. The public education and the school engagement program on the school environment according to the informants is a conscious effort made by the school to share ideas about ways of conserving the environment”.

In relation to the broader perspective one of the respondents indicated that they sort their waste to reduce the significant effect on the broader perspective, like the local community and the global perspective. ST3 “we sort waste products at the school, so that the products are recycled to help reduce environmental waste. We were told the significance of recycling of waste and that now waste is money. We always do discussion with the teachers to find out the best approach. We are not forced to do something, but we discuss the importance of recycling something”.

#### **7.4 COMPARING FINDINGS TO THE THEORETICAL FRAMEWORK OF THE STUDY**

This study makes effective use of three theories and a concept. That is the theory of environmental knowledge and attitude, nature, environmental knowledge and critical pedagogy as well as the concept of curriculum. The theory of Environmental Knowledge and Attitude is thus developed to assist in outlining the impact of environmental education on the attitude of people (Ramsey & 2010), the theory of nature and environmental knowledge seeks to find out how effective environmental education is, in bringing about the desired environmental and societal changes. Whereas critical pedagogy seeks to find out the knowledge content of the teacher and the student teacher, it is also significant in the approaches of the teaching methods that are used. It indicates that individuals are not tabula Rasta and as such must be allowed to participate. The respondents in this study have their interpretations and perspective about environmental education in relation to what they have study and what they see in their local community as well as what they hear about the global perspective. A critical look at the data collected shows vividly that the theory is perfect for the study as it synchronizes each other perfectly. The respondents showed knowledge of the concept of environmental education and

its significance and to reciprocate it to their various schools that they will be posted to go and teach the course environmental education. They were satisfied with the modes of the teaching of the course in the college. They also indicated that the change in the curriculum has come a long way to help in fighting the curb to environmental consequences as environmental sustainability is significant to the country and the world.

## **7.5 CONCLUSION**

This chapter showed the findings that were collected during the research process at Wesley College of Education. The responses presented by the respondents were duly presented in this chapter. The perspective of the respondents' view about environmental education were duly captured and presented. The chapter explores the main content of environmental education in Wesley College, the relevance and uniqueness of the environmental education is emphasized in the college of education and the extent to which environmental education is emphasized in the college of education.

## **CHAPTER EIGHT**

### **DISCUSSION, CONCLUSION, AND RECOMMENDATIONS**

#### **8.0 INTRODUCTION**

This chapter discussed the theories and concepts used in this study as well as the interpretations of the empirical findings from the previous chapter. In doing this, the sub question was used to address the main question. Three (3) main themes were developed, that is: 1. The perspective of the significance of the content and the extent to which environmental education is emphasized; 2.the relevance and uniqueness of the environmental education in Wesley College of Education; and 3.the extent to which environmental education is emphasized in Wesley College of Education. In order to determine whether the findings are consistent with the responses from the respondents, the findings were analysed in reference to the literatures provided at the literature review.

#### **8.1 THE PERSPECTIVE OF THE SIGNIFICANCE OF THE CONTENT AND THE EXTENT TO WHICH ENVIRONMENTAL EDUCATION IS EMPHASIZED**

The research objective is to find out how Wesley College of Education is implementing environmental educational programmes and its relevance in shaping the desired attitudinal changes in students and its repercussion to its Ghanaian society. The first sub question of the research seeks to find out the extent to which environmental education is implemented in Wesley College of Education. It looks at the aim of the program, the mode of assessment, modifications in the curriculum, the teaching strategies and the extent of awareness creation. Ghana a country in Sub-Sahara of Africa appears to be battling with so many environmental challenges even though they have enacted and formulated numerous environmental laws and been signatory to many environmental conventions (Stapp et al., 1969; Roth, 1992; Coyle, 2005).

The respondents indicated their views as,

**ST1** ‘‘we are taught to go to the primary, junior high and senior high schools to implement what we have studied about environmental education. This is to instil into the citizenry knowledge and awareness of environmental degradation and global climatic changes. We also put this into practice were ever we find our self, look at how clean our school environment is and how green it is’’.

This is in line with Rice and Kitchel (2016) citing Shulman (1986) who indicates that the pedagogical content knowledge is very imperative, and that it links content knowledge and pedagogical knowledge. A critical look at the respondent and the research done by Shulman 1986 as cited by Rice and Kitchel (2016) indicates the respondent as this puts the student teacher at a position to be able to teach at any school that he or she is posted. This also clearly indicates that it's very important to have a rich content base since that is what will be reciprocated. They go on to indicate that the content base for teaching cannot be underestimate in any way since pedagogical content knowledge to teachers go a long way to "create representation for concepts, recognize student preconceptions and misconceptions of content, and sequence curriculum to enhance student learning" (Rice and Kitchel, 2016). An acquisition of Knowledge is the key to survival and growth of an individual or a country. Countries that have higher index indication on the global educational ladder are seeing a growth in their economy as well as a change in their environmental sustainability methods. Norway, Finland, United States and Singapore are examples of countries of such kind. One can say that knowledge awareness to its citizenry has contributed to proper approaches to environmental issues. A typical example is Norway, as a result of its education and awareness has resulted in the planting of trees, conversion of cars combusting engine into electric cars as well as recycling most of its buy products.

Ghana Education Service sees it prudent to put in a curriculum whereby its citizenry can have knowledge tune to curtail environmental menace to significantly reduce the environmental crisis that the country is facing. The concept of the Ghana education service seeks to give environmental education to teachers so that they can carry it to the field to educate the masses about environmental awareness. The view of the respondent shows that the student teacher is given knowledge in environmental education at the college which they are to implement at the various institutions that they will be posted or stationed to teach. The view of the respondent also shows that they put into practice what they are thought in environmental education. They gave example about how they have kept their school in line with environmental measures. This act of practice by the Ghana educational system will go a long way to help educate students about the significant of environmental education.

This is in line with the literature by Stapp *et al.*, (1969, p.34) who identified what was central to Environmental Education as; "aiming of producing individuals with knowledge content about biophysical surrounding and its challenges as well as having the edge to help solve problems "Both the respondent and the literature by Stapp et al. (1969) are indicating the same

view. This is so because environmental education instils into the individual knowledge about the environment, which will help to curtail the challenges attributed to environmental challenges.

This is reaffirmed by Rice and Kitchel (2016) who cite Kaplan and Owings (2002) by indicating that the teacher's knowledge about content and pedagogical skill can influence the student positively. A critical comparison of the response by the respondent shows the extent to which environmental education is carried in the country and extended to the lower classes. This tries to answer the objective which was posed. Furthermore, it is clearly in support with what the theory of environmental knowledge and attitude comes to play. The theory of environmental knowledge and attitude is developed to assist in explaining the effect of environmental education on the attitude of people. As further indicated by Ramsey and Rickson (2010) about the theory of environmental knowledge and attitude indicates that the increasing of public knowledge of ecology will develop favourable public attitudes to ecological attitude. This is backed by Flamm (2006P.14) who makes it clear by asserting that 'knowledge refers specifically to an accurate understanding of an issue under consideration'. This can be said that the accurate knowledge that is gotten from a learning institution comes with a perfect knowledge since it is evaluated and tried. Therefore, environmental education in an institution comes with an accurate knowledge bank which is tried and proven.

A Research was done by De la Vega (2004) on the topic awareness, knowledge, and attitude about environmental education in some public schools in southwest Florida with parents, students, tutors and environmental specialists as the interviewees. An independent sample Ttest on parents and students on awareness, knowledge, and attitude about environmental education was done. This proved that the mean for environmental awareness was high with students and it's attributed to environmental educational. The knowledge of the students and parent was not significant; however, the attitude of the student towards environment education was high in relation to their parents. This shows that environmental education in schools and colleges go a long way to impact awareness, knowledge and attitudes of students. The correlation of environmental knowledge had a significant impact on the life of an individual. It is in this respect that the research carried by De La Vega has proved that, there is the need to teach environmental education and even the need to have a rich curriculum about environmental education which can help to touch the minds and heart of citizens. Furthermore, a look at the research indicates that parents were not privilege to have had environmental education, hence their lower score. Also, because the elementary school students had a rich curriculum about

environmental education contributed to their environmental awareness. A critical comparison with the research done by De la Vega is in line with the research done on Wesley College students in social studies department where environmental education is thought. Therefore, the theory chosen is in line with what De la Vega did in Florida.

In ascertaining the magnitude of knowledge precipitated in environmental education in the classroom there is the need to find out the rate to which learners receive knowledge by contact hours. In a focus group discussion one of the respondents **FST2** indicated that'' the environmental education periods are infused with the social studies lectures which make it difficult to know the exact hours that are allocated for its teaching, but I think we will use about three hours in a week. I also believe that it's better if the institution runs a full course which is solely environmental education''.

Also, research done by Rice and Kitchel (2016) about the influence of knowledge about beginners in agricultural science goes to confirm that, the teacher's knowledge about a topic and pedagogical skill can influence him or her positively. This goes to confirm the theory that is used.

A critical look at the statement by the respondent indicates that the environmental education thus not run as a unit course, but it's found in a course program by name social studies. This view as postulated by the respondent is in line with the literature by Stapp *et al.*, (1969) who indicate that environmental education should not run as a unit course but should be infused with other courses. It also agrees with the literature by Stevenson (2007), which indicates that it must not be seen as a discrete subject and placed in the same category as maths, English etc. But advocate that it must be put in a holistic approach that can be blended with other subjects. This approach has been undertaken by Wesley College of education where the environmental studies are blend with another course. But this view has been challenged by the respondent FST2 in a focus group who indicates that it's better to have environmental studies separated from another course. In my view I think it's prudent if the course is infused with other course as this will help to educate a large group of people without it been only specific on a certain group of people. This also makes it less expensive to have a curriculum developed for that, as huge sum of money will not be invested in a unit course or subject.

Some respondents indicate their view about the extent to which environmental education is emphasized as ST1 ''says they use project methods, discussion methods, presentation method, demonstration methods and fieldtrip's'.

This is in line with the literature by Mohmondi *et al.*, (2012), who indicate that a holistic approach is prudent and indicates that the pedagogical practices are very important. It further indicates that educational experience is very necessary which helps to foster a less materialistic approach and finally indicate that educational experience promotes a good relationship with the environment. He goes on to indicate that the holistic approach puts the individual in a state that encompasses all. The theory of environmental knowledge plays a key role in this section as environmental knowledge and attitude seeks to find the impact of environmental education on the attitude of people. Ramsey and Rickson (2010) are of the view that public awareness goes a long way to help in shaping attitudes about the environment. As they indicate that environmental knowledge positively reflects environmental attitude and motivate the drafting of environmental policies. Environmental knowledge is seen as a behaviourally distant variable that forms the base for a positive attitude towards nature, which serves as motivational forces to engage in ecologically responsible lifestyles (Geiger *et al.*, 2018). Furthermore, the theory of critical theory plays a significant role here as it advocates for the reflective assessment and critique of culture and societies to challenge problems and perspectives of individuals. Here we see that students are given the right to take educational trips where they go to observe and assess various communities that they visit to ascertain their environmental conditions, to point out and suggest solutions to that.

A critical view by the respondent shows that the respondent was not able to quantify the extent to which environmental education is carried in the school and the country at large but only made notice of awareness. It could not also categorically indicate the success that it had achieved in that period. The research objective could have been narrowed to help dig much in-depth into it. Furthermore, the choice of data collection method would have been better if the method adopted in the undertaking of the research was mixed research where a quantitative and a qualitative approach were undertaken. Lastly, the scope of discussion was limited because the researcher did not have much experience in research work. Environmental education is carried in Wesley College of education. The students at Wesley College are given the curriculum where environmental education is carried to the lower schools. All the literature used agreed with the response of the respondent and was also in congruence with the theory used. There was some limitation attached to the research of the objective understudy. I will also suggest that further research be undertaken in the same field but not limiting it to Wesley College but to some of the forty-six university colleges that are dotted across the country.

## **8.2 THE SIGNIFICANCE OF TEACHING METHODS IN THE ACHIEVEMENT OF ENVIRONMENTAL EDUCATION, AIMS AND OBJECTIVES**

The research objective tried to find out the processes by which Wesley College of Education is implementing environmental education and the relevance in changing attitudinal change. In further answering the sub question 1, which is the extent to which environmental education is implemented in the college. A theme is created on the significance of teaching methods in the achievement of environmental education. This helped to indicate the teaching process that is used in the school. The methodology used in a teaching process goes a long way to help in the achievement of an objective. Al-Rawi (2013) indicates that teaching methodology is the process; skills used by a tutor to organize and implement to achieve a learning objective. He further goes on to indicate that the teaching techniques show the competence of the teacher as this reflects his or her achievement. This will help to find out how the environmental challenges the country is going through can be overcome since Ghana is going through environmental crisis. Below is the respondent view.

**ST1** "the use of discussion, cube method and demonstration method help me to create innovative ideas and engage much in the lesson as well as the use of presentation method will help me to develop confidence to share my ideas and have the zeal in teaching, we also do fieldtrip".

Landøy *et al.*, (2020 p.137) is of the view that the knowledge received at a training institution is what will eventually be given out to students. This indicates that it's very important that we use an appropriate teaching method in our teaching process in relation to what we teach. They further go on to indicate that teaching-learning methods contributes to the cognitive function, representing the way of access to knowledge, the formative educational function, the motivational function, the instrumental function, the normative function of optimising action etc. One cannot underestimate the significance of the teaching methods in acquisition of knowledge. An appropriate teaching methodology goes a long way in developing the creative thinking abilities of students or individual. As an appropriate teaching methodology used helps in the assimilation of knowledge which finally helps in the creativity of that individual. We see that students that graduate from well endeavoured institution that is institutions with good infrastructure, teaching and learning materials come out as the best in the society. This is because they are approached in the good teaching processes and also enjoy a sound mind which contributes to the creativity of the individual. A cumulative effect of an appropriate teaching method helps in the creativity of the individual sharpening their innovativeness of the individual



since students are intrinsically motivated. This helps to improve intellectual skills as well as increasing the joy of learning in the school. The collaborative approaches to learning are also very imperative as it also helps to sharpen the communication skills of students as well as building self-confidence. But there is also the need to choose an appropriate teaching methodology, depending on the subject, the topic, the number of students, the availability teaching and learning material and the age bracket of the individual should be chosen when applying a teaching methodology. I also think that student teachers should also be given the opportunity to embrace a personal teaching style development where they will teach learners in their own style of understanding of a concept. This is because the methodological approach of something is thought better in the way it is understood.

Landøy *et al.*, (2020) classify the teaching and learning methods into three, as centred on the teacher, engrossed on the relatedness between the tutor and student and lastly student centred or participatory methods. A look at the statement of the respondent indicates that the school uses both the student-centred approach as well as the teacher and student approach and this approach is in line with the literature produced by Landøy *et al.*, (2020). They further indicate that teaching and learning methods approaches comes with its advantages and disadvantages and that it's important to adopt an approach that suits a learning process. Paiva *et al.*, (2016 P.908) cites Forman and Cazden, (1986 p. 432) as saying that "classroom discourse has been recognized as important to the educational experience of student's speech" as classroom discourse helps to relate new knowledge to the old and that this is achieved depending on the social relationship, the communication skills that are used by the tutor. This is also in line with the respondent's view who indicates that the teaching process impacts them with knowledge.

Additionally, the opinions of the respondents concur with the works of Kostova and Atasoy (2008). According to this quote, "the effective learning in environmental education is intimately tied to strategies employed by the teacher and the learners." The authors go on to indicate that the teaching and learning strategy is significant in the learning process and advocate for a student-centred education strategy. The authors also suggest that an inquiry base approach in environmental education helps in the understanding of environmental education better. We see that different approaches or teaching methods are used in Wesley College in the teaching of environmental education. The application of different teaching approaches gives room for the understanding of the course in a better way. I also want to agree with Kostova and Atasoy (2018) where the authors make a point that an inquiry-based approach helps in a teaching process of environmental education. The significance of environmental education cannot be

understated, and this is because it improves the academic achievement of students as it engages students. It also helps to break indoor habits as students taken on a field trip; it also helps to contribute to the health standards of the students as the students try to do away with environmental unhealthy habits which have effects on man. Furthermore, it helps to build leadership qualities of the students as environmental activities builds in them the qualities of good stewardship. The responses and literature review agrees with what critical theory talks about, where it indicates that a room or opportunities should be given to students since they are not tabula Rasta. Paulo Freire the Brazilian educator and philosopher asking to do away with the "banking model of education" since it treats student as nothing inside and are to be filled with knowledge (Freire & Macebo, 2005). Making the learning process to be student centred develop the mental and critical thinking of the students and help them to be self-fulfilled.

The research was not able to be carried to the lower class to ascertain the dripping effect of the teaching process. The number of respondents that undertook this research was also limited and I will suggest that considerable number of interviewees is conducted on to back the findings. There were time constraints on the researcher as well as lack of previous research studies on the topic.

The research objective seeks to find out the processes by which environmental education is implemented in Wesley College as well as the relevance in bringing attitudinal change. The research, answered sub objective one of the research objectives that is the extent to which environmental education is emphasized in the College. Various methodological approaches were adopted in the teaching of environmental education in the college. The responses of the respondents agree with the literatures and the theory. There was other theory suggested that could have played a role. There were some limitations to the research such as inaccuracies of the perceptions of the respondents and the researcher was also found in a locality where accessibility of an internet was difficult.

### **8.3 THE RELEVANCE AND UNIQUENESS OF THE ENVIRONMENTAL EDUCATION IN WESLEY COLLEGE OF EDUCATION**

The research objective seeks to find out how Wesley College of Education is implementing environmental educational program to bring about attitudinal changes in the Ghanaian citizenry through its educational institution. This theme seeks to answer the sub question 2 which seeks to find out the relevance and uniqueness of environmental education in Wesley College of Education. This is tune towards helping to overcome environmental menace in the country. The

provision of an infrastructure contributes enormously to the development of education. A good infrastructure helps to provide a good atmosphere for learning. A respondent indicates that, **ST3** “the School also needs building for the department and that will go a long way to help in the development of the department”.

A good infrastructure plays a key role in the success of an academic work in schools. A teacher also makes an input about developments in the institution as, **TR1** “We now make good use of the internet in our process of teaching where images are projected in a three-point perspective”. This is in line with Lay (2019, P.2) who indicates that “digital technologies, including videoconferencing, mobile apps”, are some of the technologies that helps to instil environmental stewardship. This is re-echoed by Fauville *et al.*, (2013), who quote Rohwedder, (1999) who indicates that “*in order to maintain a global overview of the environmental education, it is important to note that the internet also contains an impressive amount of tool games*”. I want to agree with the view of respondent **ST3**, but want to add that technological development towards learning for environmental education is very significant and will ask that the college strengthen its curriculum towards that. I will also suggest that the institution should also try to advance their curriculum towards modern technological approaches which teachers can carry to schools to advance this course of environmental education. This is because we are in the twenty first century where technology is the key in opening doors and advancing development. A better developed technology instils in to the individual to learn quick and also to know the difference within issues in a scientific explanation and to help in better understanding.

**TR2** “we are now asked to make good use of teaching learning materials to help learners understand the learning process better so that we can carry it to the field”

In answering the sub question, I look into finding out the relevance of the acquisition of environmental education. A respondent indicated that.

**ST1** “environmental education provides every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment”.

This is in line with Katie Kinnear (2021) who indicates that “environmental education promotes critical and creative thinking skills and inspires kids to become more engaged with their communities”

This is in line with the literature by Pandey *et al.*, (2020) who reiterates the objectives by UNESCO declaration in (1971) as creating “awareness about environmental problems among people, and indication the environmental problems” and the knowledge to overcome that. They also indicated that the UNESCO declaration seeks to motivate the public to participate in environmental protection as well as deduction strategic measures to curtail environmental problems. Another respondent also indicates his view about the relevance of environmental education by saying that ST2 write more... narrates their view about environmental education as... “environmental education is the creation of awareness of what we have in the environment the benefits of it and the effects of that when they are missed used or depleted” this in line with the following literatures UNESCO-UNEP, (1972), Caplet and Robert (2017) who also indicates that the Stockholm declaration also sort to create an awareness about the deterioration effects of the environment. As well as the need to put in measures to curtail environmental crisis thus emphasizing that it was tuned to create population consciousness about what the environment is and its related problems. This is in line with Katie Kinnear, (2021) who retroacts the importance of environmental education by saying that “it encourages creative thinking, as well as providing a building block that will motivate them to think sustainably. Machado *et al.*, (2016 P. 907) cites Palmer and Finlay (2003) by saying that environmental education focuses on “awareness and sensitivity, knowledge and understanding, attitudinal change of mind, skills for mitigation and lastly active participation”. This literature is also in line with the view of the respondent ST2 who also indicated that environmental education is the creation of awareness of the environmental challenges and the means to minimise that. Research by Machado *et al.* 2016 on the topic the importance of environmental education in LLA lifelong education indicates that environmental awareness which is gotten from education from schools go a long way to help bring about a change in the attitudes of students and their society. This research is also in line with the theory of environmental attitude and environmental knowledge. I also want to indicate that even though awareness creation is important, I want to emphasize that pragmatic measures must be put in place where individuals will take a practical approach in the solving of this environmental crisis. I want to think that most basic environmental measures are not really technical and difficult to adopt. I am seeing that the lack of interest in embracing this change is the problem. Is it difficult to advance a course of not setting fire in bushes? This approaches thus not need much time wasting, its important a legislation is set against such behaviours. Hence the curriculum developers must indicate it in the curriculum that the setting of fire in bushes is punishable by offence and this will educate the masses about the significance of environmental education.

The theory of critical pedagogy comes to play a need hear as it advocates for the application of individual knowledge. Furthermore, the theory of environmental attitude and environmental knowledge plays a key role here, as the acquisition of environmental knowledge is paramount. The limitation of the research is the research was not able to be replicated to other schools to substantiate the significance of infrastructure in environmental education. I suggest that further research be done to research into the significance of infrastructure in education as well as the relevance and uniqueness of environmental colleges in Ghanaian colleges.

The relevance and uniqueness of environmental education is significant for the growth of the college. Infrastructures play a significant role in environmental education. The responses of the respondents were in line with the literature. The theory of critical pedagogy was used and the theory of environmental attitude and environmental knowledge. There was some limitations and suggestion for further studies.

#### **8.4 THE EXTENT TO WHICH ENVIRONMENTAL EDUCATION IS EMPHASIZED IN THE WESLEY COLLEGE OF EDUCATION**

Environmental education in Wesley College seeks to find out how environmental education is impacting students meaningful. In answering this research objective, the research tries to answer the sub question 3 which seeks to find out the extent to which environmental education is emphasized in the college.

Yusoff (2003 p.75) indicates categorically that the global environmental crises that we are witnessing is attributable to the unprecedented economic growth and technological advances, and that it is benefiting some as well as unleashing severe social and environmental consequences.

A respondent indicates that,

**ST1** “we are sometimes taken to some communities to observe what they do, to conserve the forest, where we study some of the local communities’ methods of conserving the forest. Hear we interact with the local community members and share ideas about ways of conserving the environment. This has gone a long way to help all to acquire knowledge and we feel proud in helping to conserve forest” this is in line with the literature by Amlor and Alidza (2016) who indicates that “most societies in Africa rely on indigenous knowledge which is passed on from generation to generation”. Amlor further indicates that “knowledge about the environment has been internalised, as they consider the environment as a living, that reacts the same way as normal human beings do” Darko, (2014) quotes Dei (2000; P.6) by saying that “Indigenous

knowledge is accumulated by individuals and social groups through historical and current experience''. Thus, through the process of learning from old experience, new knowledge is also discovered. Amlor and Alidza (2016), further indicate indigenous Ghanaian societies devised methods that protected their natural habitats through the enforcement of customary laws. '' (Darko, 2014 P, 2) quotes that Akan proverb as saying ''se etirenyaentee y3 yi de3, yennyae 3kye saa'' ''which literally translates as ''as long as one's head is on, it has no option than to carry or wear the cap or hat''. This means if human continue to live on this planet, we have no option but to critically interrogate our motives and actions, which may lead to better solutions to societal problems, and in this case, the environmental problems facing the entire world today. It is a call for change in the present value systems and how they impact our world today''. Knowledge learnt from the traditional set up is very important; this is because indigenous knowledge is the first knowledge in the world. They are also people who are very experienced in many respects, this is because indigenous people see forest as their habitat as well as their spiritual home. Coupled with that, they have developed knowledge that helps to conserve the forest so as to help them continue to conserve the forest for generations to generations. The idea of going to the local community to learn from them is very encouraging as this will also help to strengthen the interest of the local people to continue to conserve their forest as this will motivate them to do more. A good collaboration with the local community people also helps to build a common front which will help them to resist any oppressor. I will also advocate that an opportunity should also be given to the local community leaders to also come and share their knowledge about the conservation of the forest as this will bring a good relationship and help them to learn more. Culturally this collaboration between the school and the community brings about a good spirit between both institutions; this is because the Africa set up believes in local leadership where lands belong to the family and chiefs. A good collaboration goes a long way to helping in maintaining the forest.

Another respondent indicated that

ST2 ''the School has planted many trees in the compound of the school to serve as a means of keeping the compound green. We helped in the planning and planting of the trees, we discussed that we should try to plant local trees that was found in the environment before'' unstructured observation around that campus indicates that the school had many trees around the compound, it was indicated to me that the school used to use the trees around the campus as logs for firewood to help them cook for the students to eat. It was indicated to me that the school has developed a new means of cooking and that is the use of gas to cook this innovation has gone

to help recover the forest. They have also taken it as a responsibility to recover the plants that were logged for the firewood. It was also seen that the authorities of the school have taken it a responsibility to plant trees around the streets in the compound and this has added more beauty to the compound.

Yusoff, (2003 p. 75) indicates that ‘low civic consciousness that spawned environmental deterioration. Among them are poor understanding and education on environmental issues, lack of knowledge and lack of information and that who gets knowledge about environmental crisis act swiftly to in their own small ways’. Even thou I agree with the view of Yusoff, I want to argue that it’s the enforcement of a law that brings about a change and so leaders of the world must be very interest in a punitive measure that can contribute to the change of people. I am of the convincing that it’s good to educate the masses but a swift change will come only when people are punished when they offend. Communities should also be reward when they are able to conserve their forest; hence it’s very important a trade relationship is built between communities and the government when they are able to conserve their forest as this will go a long way to conserve the forest. A policy of such kind will encourage communities who own forest to continue to do that.

During one of the focus group discussions one of the students also indicated that waste in the school is sorted out. The response by the student is indicated below.

ST3 ‘‘ we sort waste products at the school, so that the products are recycled so as to help reduce environmental waste. We were told the significance of recycling of waste and that now waste is money. We always do discussion with the teachers to find out the best approach. We are not forced to do something, but we discuss the importance of recycling something’’. The sorting of a waste products goes a long way to help the reuse of the product, recycling of waste this go a long way to help in the reduction of the use of the raw material that are harvested and used for the kind of product that they want to use. This is a good environmental practice and will advocate that they show case products that they have recycled so that it will prove to the students and the community the significance of recycling products when they are no more in use. This practicality will sink very deep into people to know that there is nothing like waste in the world and that waste is money. I want to advocate that we stop the use of the word

“waste” since in this current generation there is nothing like waste.

The theory of critical pedagogy theory was used. This theory was developed by Paulo Freire a Brazilian scholar. This theory was developed from critical theory. This theory is appropriate because it deepen youth’s connections to place as well as their understanding of ecological

systems. This definition incorporates the idea that man can change reality and the necessary conditions for such a change already existed “which implies that, unlike traditional positivist style outlooks on the world, humans are the “producers of their own historical way of life in its totality. This is in line with the research done by Guru (2011) about critical pedagogy in the classroom and the community. It showed that the application of critical pedagogy contributes to the growth of a society as individuals are empowered and see everything as their own.

I suggest that further research is undertaken on the significance of traditional knowledge in the sustainability of environmental education and this knowledge should be documented so that it will serve as knowledge bank. The use of traditional knowledge is significant but it’s difficult to substantiate the effect of that and the processes that it takes, it indicates its views in spirituality which is difficult to explain. Some limitation of the study was lack of previous research studies on the topic.

The research sort to find out the extent to which environmental education is emphasized in Wesley College. The view of environmental knowledge was seen significantly as the school participate in the conservation of local community forest as well as the school compound. The need to conserve the environment was particularly important to the institution as they had move from the cutting done of trees for firewood to the use of innovative means which helps to conserve the forest. Individual students participated significantly to discussions to the conservation of the forest. They had also showed that they were friends of the earth by trying to sort products so that it could be used again.

## **8.5 CURRICULUM**

Gündüz *et al.*, (2018) is of the view that environmental education is extremely important that agenda 21 which is the product of the earth summit which took place in Rio de Janeiro, Brazil, in 1992 calls for re-orientation of all educational curriculums towards sustainability of the earth.

Respondent ST2 indicates that “The curriculum of the environmental education focusses on how to develop necessary skills and expertise “address environment related challenges”. And ST4 is of the view that the “curriculum is not very broad and thus not equips them very well in environmental knowledge to be much competitive as compared to other degree students who study environmental studies or science”. This view as expressed by the respondent is in line with the Yusoff (2003), indicate that the school curriculum of the Malaysians has an integrated curriculum which seeks for the balance growth of students to develop some basic skills and that environmental education is infused with other subjects. The curriculum of environmental



education was structured in the form that, the five premier universities that supervise the 46 colleges, four of them almost runs the same program and the of Cape Coast runs a similar curriculum to the other four. There is a content of environmental education from the primary school to the senior secondary school. The curriculum is infused with another course at both the primary and the senior secondary.

Yusoff (2003 p. 75) further indicates that the behavioural change that is associated with environmental education comes in the form of both cognitive and affective outcomes. Additionally, he points out that environmental education employs a holistic view that considers the ecological, social, cultural, and other components of an issue as well as a problem-solving strategy, is inter-disciplinary, and is a continuous, life-long educational process.

The curriculum of an institution is like a key to a door, it is very important that institutions pay a key role in developing a curriculum that is tune towards solving a problem. It will be nice if cooperative bodies that are designing curriculum take into consideration of the local community to come and contribute to their drawing of the curriculum, by so doing they will put in their local concepts of tackling a problem. Furthermore, curriculums are design to help overcome a problem, and the citizens are the people that benefit from it, it's therefore important that they are called upon to help them to participate and also to understand the concept that they look forward to implement. The point is the curriculum is drawn for the people hence the people must have a stake to take part in its design. Furthermore, a curriculum for environmental education should be drawn in the form that the learners will see the practical concept of that and it should also be broken down to a simple unit to help in its better understanding. The curriculums' objective should be drawn in the form that it will be easy to achieve and understood and should be related to the local community or country before the international community.

I suggest that looking at how important environmental education is; it will be prudent if all institutions undertake some courses in environmental education. I also suggest that policies be implemented so that households will sort their used products so that it can be recycled. A curriculum development should also have a critical look at the curriculum to develop it to suit the Ghanaian economy.

## **8.5.1 CONCLUSION**

Ghana a country in sub-Saharan of Africa is battling with enormous environmental challenges which are affecting the country in both economic and socio-economic ways.

The research explored the extent, to which environmental education is emphasized in the college, it also sought to find out the content of environmental education in the college and also how relevant and unique environmental education is emphasized. A document analysis was done on the curriculum of the college of education as well as a primary and junior high school so as to find out the ripple effect of environmental education to the citizenry. It proved that environmental education is paramount to the sustainability of the earth and hence the government has taken keen interest by inculcating that in to the curriculum of the educational institution in the country,

From the research findings the study has demonstrated that environmental education is one of the ways in helping to mitigate climate change. Wesley College of education is one of the institutions helping to champion environmental education in Ghana. Based on the synthesis of views from the respondents, it can be concluded that environmental education is paramount to the institution. The curriculum that is run by the institution is in congruence with environmental education. The institution has also implemented other environmental measures to reduce environmental crises. This thesis indicated vividly that environmental education is the way to informing the citizenry the way to reduce or overcome environmental challenges, since individuals will have some knowledge content about environmental problems and how to overcome that. The environment is what sustains us, how will you feel if the centre does not hold. Schools are seen as one of the educational institution that can sphere head in dissemination of information that will help contribute to environmental sustainability. The drawing of a rich curriculum towards environmental sustainability is a step in the right direction to the achievement of environmental sustainability.

## **8.6 RECOMMENDATIONS**

### **8.6.1 RECOMMENDATIONS FOR ACTION BY GOVERNMENT**

The research unearthed some important challenges that the Wesley College of Education is going through in the department of environmental education and the college at large. I suggest that the college of education should be adequately resourced so that the institution will be able to impact the students meaningfully in the field of environmental education so that they can contribute to the sustainability of the world. The college did not have adequate resources to keep the department in a perfect way, as I could not see adequate teaching and learning

materials to contribute to the learning process. They complained that the department did not really have projectors on their own which they could use during lecture hours and that projectors were shared. I suggest that we are now in modern era where the internet is one of the keys to development hence the need to have it. It's also important that the government of Ghana should be able to increase facilities, logistics, and infrastructure as well and any supporting materials that can contribute to the impartation of knowledge in environmental education.

It will also be prudent if government could increase resources both human, material and finance to help develop a curriculum that can help to bring a change in the Ghanaian environment. I will also suggest that a further study be done to pave way for a comprehensive and interdisciplinary curricula development.

I also suggest that they increase the infrastructure of the institution as the lecture halls were extremely limited. They should help the institution with, more housing unit for the students as well as the tutors. Government should also put in place in-service training for civil services whereby environmental literacy will be learned.

#### **8.6.2 RECOMMENDATIONS FOR ACTION BY COLLEGE MANAGEMENT**

Wesley College is an old institution in the country that is purposely designed to help train Ghanaian teachers so that they can reciprocate knowledge transfer to the various institutions in the country. That is the primary, junior and senior high school. It is an institution of pedagogical training, hence it's imperative that the college authorities put everything in place so that they can give out the best to the teacher trainee so that they can transfer this acquired knowledge to the generations to come. I suggest that they increase the capacity of the teachers in the department as they had limited staff at the environmental education department in relation to the ratio of the students. I also suggest that they admit tutors who have pursue doctorate degree in environmental education as none of the staff in the department held a doctorate degree. There should also be some collaboration between the various institutions that are running environmental education whereby they can share knowledge with one another about how to manage and solve environmental issues.

I suggest government should disperse more funds on technical training and researching on environmental education projects so that institutions can know what is happening in the country and the way forward to sustainability.

### **8.6.3 RECOMMENDATIONS FOR FURTHER RESEARCH**

The research work made go use of a qualitative approach. I think that it will also be prudent to use a quantitative approach or mixed research to substantiate what the views of the qualitative approach has come out with.

The research employed interviews, focus group and observations in the department of environmental studies; I suggest that it will be prudent if other research is made on the same topic in one of the 46 University Colleges in the Country.

I think it will also be important if further research is made in the lower classes to which they are to transfer their knowledge and to substantiate the dripping effects on the lower classes where they transmit their knowledge.

### **8.6.4 RECOMMENDATION FOR ACTION IN ENVIRONMENTAL EDUCATION**

The governing body that is responsible for the development of curriculum for Colleges of Education should periodically review the curriculum of institutions more specifically with environmental education to tie the local content to the global perspective. They should also include new measures that can bring about adaptation to global climate change like resilience etc.

The curriculum allocates three hours for lectures in a week, and I think that students in that department who are majoring in environmental studies are not really having enough credits to impact them meaningfully.

I suggest that the department make effective use of field works more regularly so that they can see the reality at hand and measures to curtail it

I also suggest that students in that department should have the privilege of having a department that is solely designed for environmental education.

## REFERENCES

- Abiogu, G.** (2014). Philosophy of education: A tool for national development?.
- Aboagye, E., & Yawson, J. A.** (2020). Teachers' Perception of the New Educational Curriculum in Ghana. *African Educational Research Journal*, 8(1), 6-12.
- Addae-Mensah, I., Djangmah, J. S., & Agbenyega, C. O.** (1973). *Family Background and Educational Opportunities in Ghana: A Critical Look at the Secondary School Selection Mechanism--the Common Entrance Examination*. Ghana Universities Press.
- Adom, K.** (2019). Indigenous knowledge for environmental sustainability education in Ghana: Myths. *Agriculture & Food: E-Newsletter*, 1(3), 43-45.
- Adu-Agyem, J., & Osei-Poku, P.** (2012). Quality education in Ghana: The way forward. *International Journal of Innovative Research and Development (ISSN 2278– 0211)*, 1(9), 164-177.
- Adu-Amankwaah, B.** (2008). *Ethnic Politics and its Potentials for Violent Conflicts: A Ghanaian Perspective* (Master's thesis).
- Agbenyega, J. S., & Tamakloe, D.** (2021). Using Collaborative Instructional Approaches to Prepare Competent Inclusive Education Student Teachers. In *Instructional Collaboration in International Inclusive Education Contexts*. Emerald Publishing Limited.
- Agyemang, E.** (2017). *Farmer-herder conflict in Africa: An assessment of the causes and effects of the sedentary farmers-Fulani herdsman conflict: A case study of the Agogo traditional area, Ashanti Region of Ghana* (Master's thesis, UniversitetetiAgder; University of Agder).
- Alderuccio, M. C.** (2010). An investigation of global/local dynamics of curriculum transformation in sub-Saharan Africa with special reference to the Republic of Mozambique. *Compare*, 40(6), 727-739.
- Al-Hassan, O.** (2004). *Politicized soldiers: Military intervention in the politics of Ghana, 1966–1993*. Washington State University.
- Al-Rawi, I.** (2013). Teaching methodology and its effects on quality learning. *Journal of Education and Practice*, 4(6), 100-105.

- Amlor, M. Q., & Alidza, M. Q.** (2016). Indigenous education in environmental management and conservation in Ghana: The role of folklore.
- Antwi, M. K.** (1992). *Education, society and development in Ghana*. Unimax.
- Arbuthnot, J.** (1977). The roles of attitudinal and personality variables in the prediction of environmental behavior and knowledge. *Environment and behavior*, 9(2), 217-232.
- Armah, P. H.** (2017). Teacher education and professional learning in Ghana. *The Institute for Education Studies (IFEST): Accra. Recuperado a partir de [https://www.academia.edu/34610560/TEACHER\\_EDUCATION\\_AND\\_PROFESSIONAL\\_LEARNING\\_IN\\_GHANA](https://www.academia.edu/34610560/TEACHER_EDUCATION_AND_PROFESSIONAL_LEARNING_IN_GHANA)*.
- Asara, V., Otero, I., Demaria, F., & Corbera, E.** (2015). Socially sustainable degrowth as a social–ecological transformation: repoliticizing sustainability. *Sustainability Science*, 10(3), 375-384.
- Asekere, G. E. O. R. G. E.** (2019). *Internal Democracy and the Performance of Political Parties in Ghana's Fourth Republic: A Comparative Study of the National Democratic Congress and New Patriotic Party in Selected Constituencies (2000-2016)* (Doctoral dissertation, University Of Ghana).
- Atuguba, J. A.** (2019). *Environmental education in colleges of education in Ghana: experiences and perceptions of environmental educators* (Doctoral dissertation, University of Birmingham).
- Ajzen, I.** (2001). Nature and operation of attitudes. *Annual review of psychology*, 52(1), 27-58.
- Babarinde, K., & Farayola, J. A.** (2005). Kantain Moral Test for Deregulating Education in Developing Societies. *Nigerian Journal of Educational Philosophy*, 12, 8-13.
- Barrett, M. J.** (2006). Education for the environment: Action competence, becoming, and story. *Environmental Education Research*, 12(3-4), 503-511.
- Bennell, P., & Akyeampong, K.** (2007). Teacher motivation in sub-Saharan Africa and south Asia (Vol. 71). London: DfID.
- Borg, A. J.** (1980). Language and socialization in developing Malta.
- Bowen, G. A.** (2009). Document analysis as a qualitative research method. *Qualitative research journal*.

- Bregman, J., & Fisher, M. (1999).** Environmental education: The millennium challenge. *Science and environment education views from developing countries. Secondary Education Series. World Bank, Education Advisory Service (ERIC Document Reproduction Services No ED 456025).*
- Briggs, P., & Connolly, S. (2016).** *Ghana.* Bradt travel guides.
- Brown, B. W., & Saks, D. H. (1986).** Measuring the effects of instructional time on student learning: Evidence from the beginning teacher evaluation study. *American Journal of Education, 94(4), 480-500.*
- Brundtland, G. H. (1987).** Our common future—Call for action. *Environmental Conservation, 14(4), 291-294.*
- Bryman, A. (2012).** *Social Research Methods (4<sup>th</sup> Ed).* Oxford University Press.
- Carson, R. (1962).** Silent Spring III. *New Yorker, 23.*
- Carter, R. L., & Simmons, B. (2010).** The history and philosophy of environmental education. In *The inclusion of environmental education in science teacher education* (pp. 3-16). Springer, Dordrecht.
- .
- Chakrabarty, D. (2017).** The politics of climate change is more than the politics of capitalism. *Theory, Culture & Society, 34(2-3), 25-37.*
- Ciplet, D., & Roberts, J. T. (2017).** Climate change and the transition to neoliberal environmental governance. *Global Environmental Change, 46, 148-156.*
- Cohen, D., & Crabtree, B. (2006).** Qualitative research guidelines project.
- Costley, K. C. (2015).** Research Supporting Integrated Curriculum: Evidence for Using This Method of Instruction in Public School Classrooms. *Online Submission.*
- Coyle, K. (2005).** Environmental literacy in America: What Ten years of NEETF/Roper Research and Related studies say about Environmental Literacy in the U.S. Washington, D.C.: NEETF.
- Creswell, J. W. (2014).** *A concise introduction to mixed methods research.* SAGE publications.

- Crotty, M. J.** (1998). The foundations of social research: Meaning and perspective in the research process. *The foundations of social research*, 1-256.
- Cuban, L.** (1995). The hidden variable: How organizations influence teacher responses to secondary science curriculum reform. *Theory into practice*, 34(1), 4-11.
- DARKO, I. N.** (2014). CHAPTER TEN: Environmental Stewardship and Indigenous Education in Africa: Looking Beyond Eurocentric Dominated Curricula. *Counterpoints*, 443, 179-206.
- Darkwa, S.** (2016). Environmental Education for Sustainable Development: The Case of University of Cape Coast-Ghana.
- Dei, G. J. S.** (2000). Rethinking the role of indigenous knowledges in the academy. *International Journal of Inclusive Education*, 4(2), 111-132.
- de la Vega, E. L.** (2004). *Awareness, knowledge, and attitude about environmental education: responses from environmental specialists, high school instructors, students, and parents* (Doctoral dissertation, University of Central Florida).
- Dickson, K. B.** (1969). *A historical geography of Ghana*. CUP Archive.
- Dorm-Adzobu, C.** (2010). *Draft National Environmental Policy*. Central University College.
- Driscoll, B.** (2020). Big Man or Boogey Man? The concept of the Big Man in political science. *The Journal of Modern African Studies*, 58(4), 521-550.
- Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E.** (2000). New trends in measuring environmental attitudes: measuring endorsement of the new ecological paradigm: a revised NEP scale. *Journal of social issues*, 56(3), 425-442.
- Eisner, E.** (1985). Chapter II: Aesthetic Modes of Knowing. *Teachers College Record*, 86(6), 23-36.
- Ekpenyong, O.** (2009). Community Education And Socio-Cultural Development In Nigeria. *Leadership & Organizational Management Journal*, 2009(4).
- Eyiah, A.** (2004). *Regulation and small contractor development: a case of Ghana* (No. 16492016-135866).



- Fauville, G., Säljö, R., & Dupont, S. (2013).** Impact of ocean acidification on marine ecosystems: educational challenges and innovations. *Marine Biology*, 160(8), 1863-1874.
- Figlio, D. N. (1999).** Functional form and the estimated effects of school resources. *Economics of education review*, 18(2), 241-252.
- Fischer, J., Dyball, R., Fazey, I., Gross, C., Dovers, S., Ehrlich, P. R., ...& Borden, R. J. (2012).** Human behavior and sustainability. *Frontiers in Ecology and the Environment*, 10(3), 153-160.
- Flamm, B. J. (2006).** Environmental knowledge, environmental attitudes, and vehicle ownership and use.
- Flick, U. (2018).** *Designing qualitative research*. Sage.
- Forman, E. A., & Cazden, C. B. (1986).** Exploring Vygotskian perspectives in education: the cognitive. *Culture, communication, and cognition: Vygotskian perspectives*, 321.
- Freire, P., & Macedo, D. (2005).** *Literacy: Reading the word and the world*. Routledge.
- Ganaa, E. F. (2011).** *Environmental education in senior high schools: The case of northern region of Ghana* (Doctoral dissertation, Master's thesis). Retrieved from <https://dlc.library.columbia.edu/catalog/ldpd:495860/bytestreams/content/content>).
- Geiger, S. M., Fischer, D., & Schrader, U. (2018).** Measuring what matters in sustainable consumption: an integrative framework for the selection of relevant behaviors. *Sustainable development*, 26(1), 18-33.
- Ghana Ministry of Education (2007).** Meeting the Challenges of Education in the Twenty-first Century. A Report of the President's Committee on the Review of Education Reforms in Ghana. Accra: *Adwinsa Publications* (Gh) Ltd.
- Ghana Statistical Service (2021). *Ghana Statistical Service Released 2021 PHC General Report*. Available from: <https://flatprofile.com/ghana-statistical-servicereleased2021phc-general-report/> [Accessed: 6/10/2021].
- Gough, N. (2016).** Postparadigmatic materialisms: A “new movement of thought” for outdoor environmental education research?. *Journal of Outdoor and Environmental Education*, 19(2), 51-65.

- Gündüz, Ş., Aşıksoy, G., & Öksüz, U.** (2018). Modular Curriculum Designed for the Environmental Education of 6th and 7th Grade Students in the North Cyprus. *EURASIA Journal of Mathematics, Science and Technology Education*, 14(6), 2133-2143.
- Gurn, A. M.** (2011). Critical pedagogy in the classroom and the community. *Curriculum Inquiry*, 41(1), 143-152.
- Hilson, G.** (2001). A contextual review of the Ghanaian small-scale mining industry. *Mining, Minerals and Sustainable Development*, 76(September).
- Hungerford, H., Peyton, R. B., & Wilke, R. J.** (1980). Goals for curriculum development in environmental education. *The Journal of Environmental Education*, 11(3), 42-47.
- Jamshed, S.** (2014). Qualitative research method-interviewing and observation. *Journal of basic and clinical pharmacy*, 5(4), 87.
- Jančić, P., & Hus, V.** (2019). Representation of teaching strategies based on constructivism in social studies. *International Journal of Innovation and Learning*, 25(1), 64-77
- Kankam, B.** (2016). Citizenship education in Ghana: A traditional and modern perspective in development. *International Journal of Information Research and Review*, 3(4), 21022108.
- Kaplan, L. S., & Owings, W. A.** (2002). The politics of teacher quality: Implications for principals. *NASSP Bulletin*, 86(633), 22-41.
- Kelani, R. R.** (2015). Integration of environmental education in science curricula in secondary schools in Benin, West Africa: Teachers' perceptions and challenges. *Electronic Journal of Science Education*, 19(3), n3.
- Kemp, R., & Martens, P.** (2007). Sustainable development: how to manage something that is subjective and never can be achieved?. *Sustainability: science, practice and Policy*, 3(2), 5-14.
- Kempton, W., Boster, J. S., & Hartley, J. A.** (1996). *Environmental values in American culture*. mit Press.
- Kivunja, C., & Kuyini, A. B.** (2017). Understanding and applying research paradigms in educational contexts. *International Journal of higher education*, 6(5), 26-41.

- Kinnear, K. (2021). Why Environmental Education is Important for Kids: *Circular Economy* Available from: <https://www.rubicon.com/blog/environmentaleducationforkids/> [Accessed: 6/07/2022].
- Kostova, Z., & Atasoy, E.** (2008). Methods of Successful Learning in Environmental Education. *Online Submission*, 4(1), 49-78.
- Landøy, A., Popa, D., & Repanovici, A. (2020). Teaching learning methods. In *Collaboration In Design. Designing a Pedagogical Approach in Information Literacy* (pp. 137-161). Springer, Cham.
- Lawson, E. T., Gordon, C., Mensah, A., & Atipoe, E.** (2015). Developing Tools for Community-Based Environmental Education for Migrant Children and Youth in Ghana. *Journal of Education and Learning*, 4(2), 6-18.
- Lay, Y. F.** (2019). Integrating Environmental Education and ICT. *Eurasia Journal of mathematics, science and technology education*, 15(5), em1707.
- Lincoln, Y. S., & Guba, E. G.** (1990). Judging the quality of case study reports. *International Journal of Qualitative Studies in Education*, 3(1), 53-59.
- Little, A. W.** (2010). *Access to Basic Education in Ghana: Politics, Policies and Progress. CREATE Pathways to Access. Research Monograph No. 42.*
- Machado, K. B., Teresa, F. B., Vieira, L. C. G., Huszar, V. L. D. M., & Nabout, J. C.** (2016). Comparing the effects of landscape and local environmental variables on taxonomic and functional composition of phytoplankton communities. *Journal of Plankton Research*, 38(5), 1334-1346.
- Mahmoudi, S., Jafari, E., Nasrabadi, H. A., & Liaghatdar, M. J.** (2012). Holistic education: An approach for 21 century. *International Education Studies*, 5(2), 178-186.
- Marcotte, D. E.** (2017). Something in the air? Air quality and children's educational outcomes. *Economics of Education Review*, 56, 141-151.
- Mazrui, A.** (2003). Conflict in Africa: an overview. *Armed Conflict in Africa*, 21-42.
- McGrath, S. A., & Gu, Q.** (Eds.). (2016). *Routledge handbook of international education and development*. Abingdon: Routledge.

- McIntyre, A., & Milfont, T. L.** (2016). Who cares? Measuring environmental attitudes. *Research methods for environmental psychology*, 93-114.
- Mensah, J.** (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. *Cogent Social Sciences*, 5(1), 1653531.
- Meyer, L. H.** (Ed.). (2017). *Intergenerational justice*. Routledge.
- Nagra, V.** (2010). Environmental education awareness among school teachers. *The Environmentalist*, 30(2), 153-162.
- Nalumu, D. J., Mensah, H., Takyi, S. A., Amponsah, O., & Marija, J.** (2021). Restoring the school garden programme in Ghana: an exploration of the key issues from the past and implications for the future. *SN Social Sciences*, 1(8), 1-22.
- Ninsin, K. A.** (2016). Political Transitions, Electoral Mobilization, and State Institutions I. *Issues in Ghana's Electoral Politics*.
- Nyarkoh, E.** (2016). *THE DEGREE OF AUTONOMY IN COLLEGES OF EDUCATION IN GHANA A Comparative Study of Before and After their Upgrade to Tertiary Status* (Master's thesis).
- Nyoagbe, J.** (1993). The Impact of the Educational Reform on Teacher Performance at Basic Education Level.
- Ogundowole, E. K.** (2004). Philosophy and Society. *Lagos: Correct Counsels Ltd.*
- Oliver, P.** (2010). *The student's guide to research ethics*. McGraw-Hill Education (UK).
- Opoku, M. P., Asare-Nuamah, P., Nketsia, W., Asibey, B. O., & Arinaitwe, G.** (2020). Exploring the factors that enhance teacher retention in rural schools in Ghana. *Cambridge Journal of Education*, 50(2), 201-217.
- PAIVA, T., TRACANA, R., & TADEU, P.** (2016). The importance of EE (Environmental Education) in LLE (Lifelong Education). *TOJET*.
- Palmer, J.** (2002). *Environmental education in the 21st century: Theory, practice, progress and promise*. Routledge.
- Palmer, M., & Finlay, V.** (2003). *Faith in conservation: new approaches to religions and the environment*. World Bank Publications.

- Pandey, A., Mishra, S. K., Kansal, M. L., Singh, R. D., & Singh, V. P. (Eds.). (2020).** *Hydrological Extremes: River Hydraulics and Irrigation Water Management (Vol. 97).* Springer Nature.
- Partlow, K. M., & Gibbs, W. J. (2003).** Indicators of constructivist principles in Internet-based courses. *Journal of Computing in Higher Education, 14(2), 68-97.*
- PGAdmin (2021)** Price Ghana, history of education in Ghana, available from price Ghana.   
*History Of Education in Ghana (2021) (pricesghana.com)* retrieved on 08.09.2021.
- Popham, W. J. (2011).** Assessment literacy overlooked: A teacher educator's confession. *The Teacher Educator, 46(4), 265-273.*
- Ramadhan, S., Sukma, E., & Indriyani, V. (2019, August).** Environmental education and disaster mitigation through language learning. In *IOP conference series: Earth and environmental science (Vol. 314, No. 1, p. 012054).* IOP Publishing.
- Ramsey, C. E., & Rickson, R. E. (1976).** Environmental knowledge and attitudes. *The Journal of Environmental Education, 8(1), 10-18.*
- Rice, A. H., & Kitchel, T. (2016).** Influence of Knowledge of Content and Students on Beginning Agriculture Teachers' Approaches to Teaching Content. *Journal of Agricultural Education, 57(4), 86-100.*
- Rohwedder, R. (1999).** Environmental education goes high-tech.
- Roth, C. E. (1992).** Environmental Literacy: Its Roots, Evolution and Directions in the 1990s. Columbus, OH: ERIC/SMEAC Information Reference Center.
- Saunders, M., Lewis, P., & Thornhill, A. (2009).** *Research methods for business students.* Pearson education.
- Shulman, L. S. (1986).** Those who understand: Knowledge growth in teaching. *Educational researcher, 15(2), 4-14.*
- Stapp, W. B., Bennett, D., Bryan, W., Fulton, J., MacGregor, J., Nowak, P., & Swan, J. (1969).** The concept of environmental education. *Journal of environmental education, 1(1), 30-31.*

- Stephens, J. C., Hernandez, M. E., Román, M., Graham, A. C., & Scholz, R. W. (2008).** Higher education as a change agent for sustainability in different cultures and contexts. *International journal of sustainability in higher education.*
- Stevenson, R. B. (2007).** Schooling and environmental education: Contradictions in purpose and practice. *Environmental education research, 13(2), 139-153.*
- Study country(2021).** Education in Ghana available from The Education system of Ghana (studycountry.com). Accessed 15.09.2021.
- Svendsen, C., Walker, L. A., Matzke, M., Lahive, E., Harrison, S., Crossley, A., ...& Spurgeon, D. J. (2020).** Key principles and operational practices for improved nanotechnology environmental exposure assessment. *Nature Nanotechnology, 15(9), 731-742.*
- Tilbury, D. (1992).** Environmental education: A head, heart and hand approach to learning about environmental problems. *Education, 7.*
- Tyler, R. W. (1957).** The curriculum-then and now. *The Elementary School Journal, 57(7), 364-374.*
- UNESCO (1972).** First intergovernmental conferences on environmental education. *Tbilisi final report. Paris author.*
- United Nations Educational, Scientific and Cultural Organization (UNESCO). (2014).** UNESCO roadmap for implementing the global action programme on education for sustainable development.
- United Nations Environment Programme (UNEP) (1972).** International Resource Panel. Sustainable Consumption, & Production Branch. *Decoupling natural resource use and environmental impacts from economic growth.* UNEP/Earthprint.
- Uwaezu, O., Brownson, N., & Nwachukwu, I. M. (2014).** Environmental education: A holistic approach using Wall Chart with Manual. *Educational Research and Reviews, 9(19), 842-856.*
- Vygotsky, L. S., & Cole, M. (1978).** *Mind in society: Development of higher psychological processes.* Harvard university press.

**Yusoff, S.** (2003). The need for emphasis on environmental education for national development in Malaysia. *Masalah Pendidikan*, 26, 75-82.

**APPENDIX I**

**CONSENT FORM**

I agree to take part in this project. I understand the purpose of this study and what is required of me as participant. I have been informed that the interview would be audio taped and also aware that I can withdraw from participating at any time without any consequences.

I also give my consent that my personal data to be processed until the end of the project which can last to approximately in august 2022. Name:

Date:

**INTERVIEW GUIDE FOR TEACHERS**

**INTERVIEW GUIDE**

**Objective 1: What is the main content of environmental education in Wesley University College?**

**Tutors**

- 1. What is the scope of the curriculum of your environmental education?  
.....  
.....  
.....  
.....  
.....  
.....

2. Can you mention some of the contents in environmental education curriculum and why you think it is relevant?.....  
.....  
.....  
.....  
.....
3. What topics are contained in your curriculum of environmental education?.....  
.....  
.....  
.....
4. How relevant is the content of your curriculum on environmental education to your country or local community?.....  
.....  
.....
5. How relevant is this content of environmental education to your life?.....  
.....  
.....  
.....
6. Are you satisfied with the content of the program of environmental education, if yes why?.....  
.....  
.....
7. What do you think could be done to help achieve the goals and objectives of the course as well as the curriculum in environmental education?.....  
.....  
.....  
.....
8. What does the environment mean to you?.....



- .....  
.....  
.....  
.....  
.....
9. What is environmental education and how important is it?.....  
.....  
.....  
.....
10. What are some of the key components in environmental education that need to be addressed?.....  
.....  
.....  
.....
11. In your own view do you think the current curriculum addresses issues of environmental education adequately? (give examples).....  
.....  
.....  
.....  
.....
12. What teaching methods do you employ in teaching environmental education in a. Practical concepts.....  
.....  
b. Classroom/ theoretical teaching.....  
.....  
.....
13. Are your teaching strategies promoting critical thinking in environmental education in helping to solve or address environmental problems. Please explain.....  
.....  
.....  
.....
14. Are you able to use assessment to assess the learning outcomes, explain please?.....  
.....  
.....  
.....  
.....

15. What are some of the barriers to learning and misconceptions about learning?.....  
.....  
.....  
.....

16. Do you have passion for teaching and learning of environmental education, if yes how.....  
.....  
.....  
.....

**QUESTION 2: How relevant and unique is environmental education in Wesley University College of Education. Tutors**

1. What are the experiences of teacher educators in teaching environmental education in colleges of education in Ghana?.....  
.....  
.....  
.....

1. How has your experience in your training influenced the teaching of environmental education?.....  
.....  
.....  
.....

2. Has this experience helped in shaping your perception and teaching of environmental education?.....  
.....  
.....  
.....

3. What have been your challenges in teaching environmental education?.....  
.....  
.....  
.....

4. Has cultural or traditions or religious beliefs and practices affected the teaching of environmental education?.....  
.....  
.....  
.....

.....  
.....  
.....  
5. What was your experience about the environment growing up? Has this affected how you relate to the environment?.....

.....  
.....  
.....

.....  
.....  
6. What pedagogies (teaching methods) do you think are best in the approach of teaching of environmental education?.....

.....  
.....  
7. What pedagogies (teaching methods) do you apply in the teaching of your course (environmental education)?.....

.....  
.....  
8. Are there any relevant distinctions in methods in the teaching of environmental education? Explain.....

.....  
.....  
9. Do you think that environmental education should be taught separately or integrated into other subjects? Why.....

.....  
.....  
10. What do you think student teachers should achieve in other to teach environmental education competently?.....

.....  
.....  
11. Do you think knowledge about environmental education given to pre-services teachers  
equips them all? Please  
explain.....  
.....  
.....  
.....

**QUESTION 3: What is the extent to which environmental education is emphasized in Wesley University College of Education?**

1. What is the aim of the program of environmental education in this college?.....  
.....  
.....  
.....

2. What is the depth of the program of environmental education? (Extent to which it covers the curriculum and course load in credit in credit hours).  
.....  
.....  
.....  
.....

3. What is the belief in setting up this program of environmental education?.....  
.....  
.....  
.....

4. How many periods or course hours are allocated to this program? Explain with reasons.....  
.....  
.....  
.....

5. What are the modes of assessment of your environmental education programs?.....  
.....  
.....  
.....

6. Identify some keys elements in environmental education course that are more emphasized.....

.....  
.....  
.....  
.....

7. Do you think you have identified some modifications in environmental education that are important to be effected?.....

.....  
.....  
.....  
.....

8. Is environmental education taught with other subjects in the curriculum, if yes what is your perspective about that?.....

.....  
.....  
.....  
.....

9. What teaching strategies or improvement materials are used to emphasize the teaching of the environmental education subject?.....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

10. How do you recruit teachers for the teaching of environmental education programs?.....

.....  
.....  
.....  
.....

11. Why do you think environmental education is much emphasized in the

curriculum?.....  
.....  
.....  
.....  
.....  
.....  
.....

12. Are your environmental education and awareness creation closely tied to  
broader environmental  
programs?.....  
. ....

.....

.....  
.....  
**Interview guide for student teacher (s)**

**CONSENT FORM**

I agree to take part in this project. I understand the purpose of this study and what is required of me as participant. I have been informed that the interview would be audio taped and also aware that I can withdraw from participating at any time without any consequences.

I also give my consent that my personal data to be processed until the end of the project which can last to approximately in august 2022.

Name:

Date:

**QUESTION 1: What is the main content of environmental education in Wesley University College?**

1. What is the scope of the curriculum of your environmental education?

.....  
.....  
.....  
.....

2. Can you mention some of the contents in environmental education curriculum and why you think it is relevant?.....

.....  
.....  
.....

3. What topics are contained in your curriculum of environmental education?.....

.....  
.....  
.....  
.....

4. How relevant is the content of environmental education of your curriculum to your country or local community?.....

.....  
.....

- .....
5. How relevant is this content of environmental education to your life?.....  
.....  
.....
6. Are you satisfied with the content of the program of environmental education, if yes why?.....  
.....  
.....  
.....
7. What do you think could be done to help achieve the goals and objectives of the course (environmental education) as well as the curriculum?.....  
.....  
.....
8. What does the environment mean to you?.....  
.....  
.....
9. What is environmental education and how important is it?.....  
.....  
.....
10. What are some of the key components in environmental education that need to be addressed?.....  
.....  
.....
11. In your own view do you think the current curriculum addresses issues of environmental education adequately? (give examples).....  
.....  
.....
12. What teaching methods is employed in teaching environmental education in c. Practical concepts.....  
.....  
d. Classroom/ theoretical teaching  
.....



.....

**OTHER QUESTIONS.**

**QUESTION 2: How relevant and unique is environmental education in Wesley University College of Education. And QUESTION 3: What is the extent to which environmental education is emphasized in Wesley University College of Education?**

1. How do tutors prepare you as a student teacher to teach environmental education (Science) at the junior and senior high school?

.....  
.....  
.....  
.....  
.....

2. What can you say about the methods your environmental education Science tutors use to teach you?

.....  
.....  
.....  
.....  
.....

3. Are the teaching methods used by tutors helpful to you as student teacher in environmental education?

How?.....  
.....  
.....  
.....  
.....

4. Do you really understand the environmental education curriculum properly by the way you are taught at school? Can you tell me something about how you understand the courses when you are taught?.....

.....  
.....  
.....  
.....  
.....  
.....

5. Do you feel you will be well prepared to teach environmental education (Science) at junior and senior high school after completion of your teacher education? Please explain with examples?.....

.....

.....  
.....  
.....  
.....  
.....

6. Please, can you tell me how relevant the methods are helpful to you as teacher student to teach environmental education?.....

.....

.....  
.....  
.....  
.....  
.....

7. Do you do any practical activities with your environmental education (Science) tutors?

.....  
.....  
.....  
.....  
.....  
.....

8. What do you think about the practical activity you do in environmental education?

.....  
.....  
.....  
.....

.....  
.....  
9. Do tutors attend to individual student needs during teaching and learning process in environmental education periods? Please explain.

- .....
- .
- .....
- .
- .....
- .
- .....
- .
- .....
- .
- .....
- .
- .....
- .

10. How can student be adequately resourced to appropriate teaching methods in environmental education in the teaching and learning process?.....  
.....

- .....
- .
- .....
- .
- .....
- .
- .....
- .
- .....
- .

11. As a student do you have the right to ask questions during teaching and learning activities in environmental education lessons? When? And how? Explain.....

- .....
- .
- .....
- .

.....  
.....  
.....  
.  
.  
.....

12. How do you feel when you ask your environmental education (Science) tutors a question in a class, are you adequately resourced and given the privilege?

.....  
.  
.....  
.  
.....  
.  
.....  
.  
.....  
.  
.....  
.  
.....

13. How is the reaction of your environmental education (Science) tutors when you ask questions related to the lesson during the teaching and learning process?.....  
.....

.....  
.  
.....  
.  
.....  
.  
.....  
.  
.....  
.  
.....

14. Are there any particular teaching methods often used by tutors to teach you environmental education (Science)?.....

.....  
.....  
.

.....  
.....  
.....  
.  
.....  
.  
.....  
.  
.....  
.

15. Please, what are some of the methods used by tutors to teach you environmental education (Science)?.....

.....  
.  
.....  
.  
.....  
.  
.....  
.  
.....  
.

16. Do you feel prepared to teach environmental education (Science) at the junior high and senior level?

.....  
.  
.....  
.  
.....  
.  
.....  
.  
.....  
.

17. Do you have anything to say about the syllabus (content) for environmental education (Science)?.....

.....  
.  
.....  
.

.....  
.....  
.....  
.....  
.....

18. How is the teaching of environmental education (Science) related to practical life?

.....  
.....  
.....  
.....  
.....  
.....  
.....

19. In your opinion, what do you suggest as the best and appropriate methods for teaching environmental education (Science) at the junior high school as you have received different methods from your tutors?.....

.....  
.....  
.....  
.....  
.....  
.....  
.....

Please, is there anything you would like to add which will be relevant and useful in this study?.....

.....  
.....  
.....  
.....



Department of International Studies,  
Oslo Metropolitan University,  
Oslo, Norway

To whosoever it may concern,

13<sup>th</sup> September 2021

Wesley College of Education  
P.O. Box 1927  
00233-Kumasi  
Ghana

This is a letter to confirm that MrOkae Edward Oduro Jnr, is an MA student at the Department of International Studies, OsloMet University. I supervise his MA thesis at the University and hope that the Wesley College of Education(Ghana),will offer him due support that he is seeking for his research.

X

---

Rahul Ranjan

Best,  
Dr Rahul Ranjan  
Postdoctoral Research Fellow,  
Department of International Studies,  
[Riverine Rights](#), Research Council of Norway (funded)

## OsloMet — Oslo Metropolitan University

### C. Work schedule

Set out and agree on a schedule for submitting draft chapters, allowing time for feedback and their revision, below. This schedule should work towards submission of the final thesis in May 2022.

Activity(e.g. NSD application, data collection & analysis, chapter writing)	Planned completion date
Application to NSD and writing literature review chapter	October 2021
Collection of data	December, 1-31 2021
Transcription of data	December, 1-30 2021
Writing methodology chapter finishing	October 2021
Finishing literature review	November 2021
First draft of analysis chapter	December 2021
Second draft of analysis chapter	February 2021
Full thesis first draft	13 April 2022
Full thesis second draft	15 May 2022

OsloMet Supervision regulations for the Master's program

Master's students and supervisors agree on the points above, and have read the course plan for the thesis and "Guidelines for the thesis".

	Date:	Signature:
Student: Okae Edward Oduro jnr	05.10.2021	
Main supervisor: Rahul Ranjan	06.10.2021	
Co-supervisor (if applicable):		
Program coordinator: Tom Griffiths		



## APPENDIX IV: INFORMATION LETTER

### Are you interested in taking part in the research project

”( Environmental Education in Ashanti Region of Ghana.A case study of the Wesley College of Education in the Kumasi metropolitan assembly. )”?

#### **Purpose of the project**

The purpose of the study is to find out how environmental education is implemented in the curriculum of the school and how it thought to student tutors and their impact in the community and the country at large

#### **Who is responsible for the research project?**

[oslometropolitant university, faculty of international education and development] is the institution responsible for the project.

#### **Why are you being asked to participate?**

The data material for the thesis will consist of policy document and interviews with stakeholders in teacher University College of education in Ghana. You are kindly invited to participate in the study as a tutor and student of the college.

#### **What does participation involve for you?**

If you agree to participate in this study you will have an interview which will be recorded, using a smart phone with dicktaphone app. This means that the data is protected, so that knows an authorized person can assess the data. The interview will take about 45 minutes to find out more about environmental education in the college.

#### **Participation is voluntary**

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

Participation is voluntary; you can choose to stop at any time. There will be no negative consequence for your redrawal

#### **Your personal privacy – how we will store and use your personal data**

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

We will process your personal data for the project confidential, in accordance with the data process legislation. Only the supervisor by name Rahul Ranja and okae Edward oduro jnr the researcher will have access to it.

#### **What will happen to your personal data at the end of the research project?**

After the end of the project in 15<sup>th</sup> may 2022 the data will be discarded

#### **Your rights**

As long as you can be identify with the project you have the right to assess the personal data that is been process about you.

Request that your personal data be deleted

In correct data about you is corrected on request

Received a copy of your personal data

Send complain to data protection officers in Norway about your personal data

### **What gives us the right to process your personal data?**

We will process your personal data based on your consent.

Based on an agreement with [Oslo Metropolitan University and NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

### **Where can I find out more?**

If you have questions about the project, or want to exercise your rights, contact:

- [ Oslo Metropolitan University or Dr Rahul Ranja, you can contact him on 94880027 and email rahulran @ oslomet an
- Our Data Protection Officer: [Nina Hescnes]
- NSD – The Norwegian Centre for Research Data AS, by email: ([personverntjenester@nsd.no](mailto:personverntjenester@nsd.no)) or by telephone: +47 55 58 21 17.

Yours sincerely,

Project Leader  
(Dr Rahul Ranja)

Student (Okae Edward Oduro Jnr)

---

## **Consent form**

I have received and understood the information about the project and have been given the opportunities to ask question, I give consent to participate in an online interview. For information about myself to be published in a way that i can be recognized. I give consent for my data to be processed up to the end of my project which 15 may 2022

I have received and understood information about the project [**Environmental Education in Ashanti Region of Ghana. A case study of the Wesley College of Education in the Kumasi metropolitan assemble**] and have been given the opportunity to ask questions. I give consent:

- to participate in ( Interview)
- to participate in (Interview)

I give consent for my personal data to be processed until the end date of the project, approx. [*insert date*]

---

(Signed by participant, date)