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PLACE-BASED EDUCATION FOR SUSTAINABILITY: A STRATEGY THAT PROMOTES ENVIRONMENTAL AWARENESS IN GHANA THROUGH THE ARTS

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ABSTRACT

The arts have the potential to empower students by helping them develop feelings towards nature and giving them a voice to actively participate in environmental protection and take up leadership roles in their communities (Sobel 1991). Unfortunately, the arts have not been explored significantly in the educational system in Ghana to solve key problems of environmental education such as low participation and inaction of students in environmental sustainability (MESTI 2012). The aim of this research was to address these problems by investigating how the arts can be used in the education curriculum in Ghana to promote inclusion of all students, link disciplines and empower students to act. The research was planned in four steps. The first step was executed by inquiring how students in Amasaman in the Ga West Municipality of Ghana learn about nature, whether they learn about nature across subjects, and whether the arts have been used as a medium to connect students to their local environment. The second step of this study investigated environmental arts education programmes through interviews with arts educators in Iceland and artists in Ghana to understand what has been done in Iceland, with the aim of transferring and adapting it to the settings in Ghana. The third step was executed with visits and observation at a national park, a historical museum in Iceland and a music festival in Sweden with the aim of examining programmes that have the potential to connect people to their local communities and help them develop positive values and attitudes towards the environment and to act on these. Based on the information gathered, the fourth phase of the study formulated recommendations for teachers, parents and policy makers on how to design environmental education programmes

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that connect students to their real-life situations and empower them to act. These lessons are also presented in the form of a song.

Keywords: act, arts, curriculum, environment, sustainability.

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1. INTRODUCTION

1.1 My inspiration

For the past four years, I have been running an NGO called *Hipsters of Nature*. The aim of the NGO is to use creative ways to raise awareness among young people about urban gardening and recycling in Ghana. I have made music and videos on environmental issues that I have used as educational materials for students. My work with the NGO and the music videos has helped me develop a deep connection with nature. I hope to develop a similar setting, in collaboration with schools, that can make students connect to nature the way I have with my work and through music.

In past years, *Hipsters of Nature* has collaborated with fashion designers and community artists who make eco-friendly products. *Hipsters of Nature* has organised workshops for students and events in local communities. The activities of Hipsters of Nature have been reported by international media like the BBC (Parkinson 2016), DeutscheWelle TV (DW 2016) and others.

I also work with the Environmental Protection Agency (EPA) of Ghana as a field officer and one of my responsibilities involves organizing educational programmes for the public, especially students, to create awareness on environmental issues and promote environmental stewardship. I was inspired to do this research because I wanted to expand my knowledge of an environmental education that is meaningful to the everyday life of students, meets their needs, connects students to their local community, and inspires them to participate actively in social and environmental justice.

Allan (2008) points out that, in order to ensure an education that gives equal opportunity to every student, it is important for teachers to re-examine themselves and be willing to be explorers, learners, improve themselves and open up to new ideas. With this in mind, as an educator and an artist, I want to examine myself, expand my knowledge and contribute to improving environmental education of students in Ghana. Even more so, as an artist I am motivated by the desire to examine how art can be used to raise awareness and find solutions to environmental problems in Ghana.

1.2 The problem statement

The Ministry of Environment, Science, Technology and Innovation (MESTI) notes that the government of Ghana is committed to promoting environmental education from the primary and junior high school to the tertiary level (Asante n.d.). Consequently, the National Environmental Policy (NEP) of Ghana states that every Ghanaian must have the opportunity to gain knowledge and develop personal skills, which will enhance positive values to make well-informed decisions to ensure a safe ecosystem and society (MESTI 2012). On the other hand, the policy recognises certain challenges that require interventions such as low awareness, low participation and poor attitude towards the environment (MESTI 2012). These challenges are described by Rademaekers and University (2011) as social issues which artists rather than environmental scientists can solve.

In the past, environmental education was mostly promoted by environmental scientists. Although environmental education has progressed remarkably, academics in this area acknowledge that there have been more successes in creating the attitudinal change of learners than in behavioural change (Leeming et al. as cited by Inwood 2007).

Additionally, Ross and Asare (2009) noted some negative perception about art education in Ghana. In their analysis, Ross and Asare (2009) noted that placement of students at senior high school level was competitive; hence students who had low grades for the basic education examination were usually given placement in the visual art class while those with higher grades got placement in the science class. Furthermore, Ross and Asare (2009) added that in primary and junior high public schools it was rare to find an art teacher because art teachers are not employed at that level.

This study will investigate how the arts can be used as a social tool to teach environmental issues in schools and inspire children to act to protect their environment.

In this research, I have been attempting to ask myself: What is the potential of the arts in environmental education in Ghana and how can the arts make engaged students?

1.3 Objectives

The following were the objectives of my research:

- To study education for sustainability programmes in Iceland that use the arts to promote environmental awareness and protection.
- To assess the ways arts can be used to empower students in Ghana, giving them voice that both enhances reflection and provides action competence.
- To assess how art education for sustainability can be used to make connections to the local culture.
- To assess how education for sustainability in art can create settings so students in Ghana may connect what they do in school to local problems and look for solutions.
- To influence environmental education policy in Ghana.

1.4 Significance of the research and the study area

The results from the research will provide recommendations that can guide teachers, parents and policy makers such as the EPA, MESTI and the Ministry of Education of Ghana in designing environmental education programmes that promote inclusion, transformational learning, connect students to their local communities and inspire students to participate actively in environmental protection in Ghana.

The study area, Amasaman, is in the Ga West Municipality of Ghana (Republic of Ghana 2013). There are about 193 communities in the municipality and its total land size encompasses about 305.4 sq. km (Republic of Ghana 2013). The total population for the Ga West Municipality in 2010 was estimated to be 217,091 (Republic of Ghana 2013).

The municipality is endowed with tourist attractions and cultural heritage sites such as a waterfall, a cave, a historical cemetery, a garden park and sacred groves (Republic of Ghana 2013). The major occupations of the people in the municipality are in sectors such as agriculture, manufacturing, business and commerce (Republic of Ghana 2013). About 55% of the population are employed in agriculture (Republic of Ghana 2013).

There are about 156 schools in the Ga West Municipality (Republic of Ghana 2013). The map of Ghana and Amasaman is shown in Figure 1.

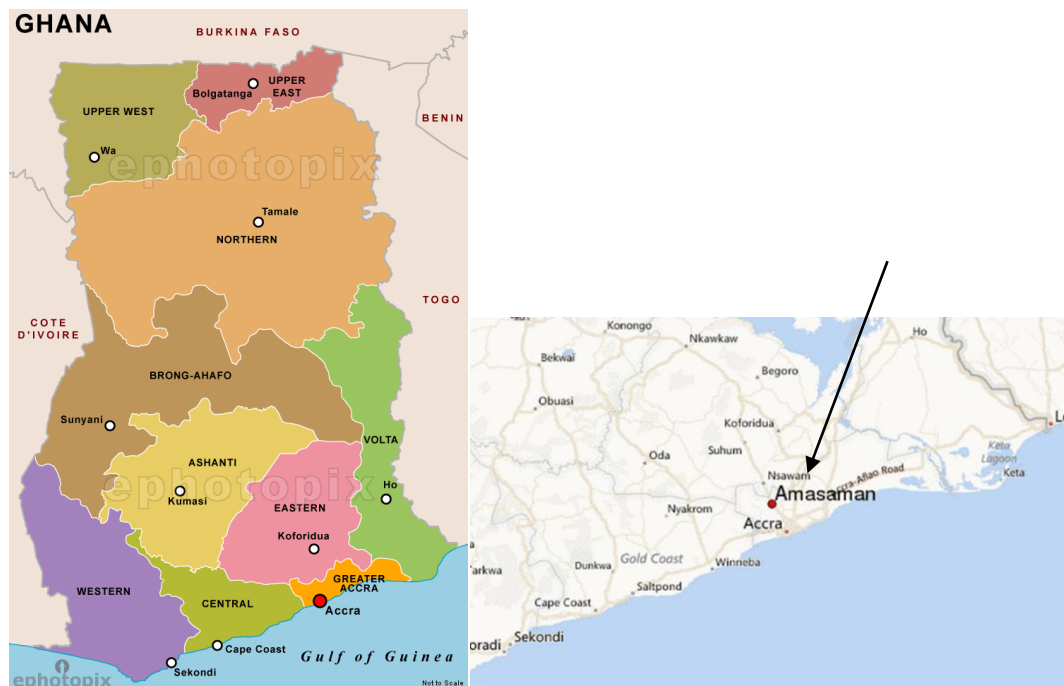


Figure 1. Map of the regions of Ghana (left) and map of Amasaman (right) (Source: figure on left from Safe Water Ghana (n.d.) and right from Weather forecast (n.d.)

2. LITERATURE REVIEW

2.1 Education systems, environmental education and participation

While some communities in North America have strived to connect education to their local communities by using the local environment as a classroom, many more, especially the industrialised countries, have increased this gap (Inwood 2006). The reason is that the latter have been stifled by the standardised education system which compels them to follow unbendable regulations that are competition- and result-oriented, and laid down by governments (Inwood 2006).

Across the world, the current state of the education system is such that today's children are rarely sent outside the classroom to experience and explore their local environment (Rodenburg 2017). Teachers prefer to use approaches that are convenient to them such as using pictures in books to illustrate topics instead of sending students outside because it saves time and is much simpler to do (Sobel 1991). Furthermore, Sobel (1991) points out that learning should not be rushed, hence students should be given more time to learn from basic to in-depth knowledge and develop a deep connection to their natural world.

Today's children are disconnected from nature and their local places because they spend more time indoors on their computers and less time doing physical activities (Sobel 1991). Besides, children study issues that are usually separated from their local environment and real-life situations; hence what they learn does not make sense to them (Sobel 1991). In view of this, Sobel (1991) suggests that an environmental education curriculum should reflect the expanding experience of the child, starting from the home to the classroom, the neighbourhood and beyond. Additionally, connecting children to nature means helping them develop a deep

relationship to nature since young children are always receptive to knowing about their environment (Rodenburg 2017).

A challenging attitudinal problem is that well-being is often mistaken to be the acquisition of materialistic things (Jónsdóttir 2017). Consequently, Jónsdóttir (2017) proposes that education should help students reconstruct their perception about what well-being is and help them re-shape their values in life so as to live in harmony with nature and others (Jónsdóttir 2017). In support of this point, Jónsdóttir et al. (2014) report that it is important to think about one's well-being and that of the earth, as this will ensure a happier life. Furthermore, a healthy ecosystem, good education, equality, citizenship, conservation of resources, ethnic diversity, and an empowered community, among others, will contribute to the well-being of an individual (Jónsdóttir et al. 2014). Supporting this statement, Rademaekers and University (2011) mentioned that artists can use their works to help people reconstruct their relationship with nature by creating environmentally friendly products.

2.2 Place-based education and critical place-based education

The Center for Place-based Learning and Community Engagement (2015) suggests the following principles of place-based education that can resolve the problems already discussed above. These principles include:

- Learning outside of the classroom by using nearby places such as the backyard, local community and the environment as classrooms
- Learning, where students are engaged in experiences relevant to them
- Learning, where the local environment is integrated into the education curriculum and used to link several subjects together
- Learning that targets the local people
- Learning that focusses on local culture and heritage
- Learning that helps the student to develop love for a place
- Learning, where students gain skills and knowledge from experienced people in the community through internships in local organisations
- Learning that promotes the social well-being of a community and fosters environmental protection

By going beyond the classroom and involving the community, place-based education reinhabits children into the natural world and thus closes the gap between classroom studies and the real life situations of children, hence making learning meaningful to them (Smith & Sobel 2010). Moreover, learning becomes a social process, not one that is imposed on them, but rather connected to their personal lives and their loved ones (Smith & Sobel 2010).

Place-based education gives an opportunity to students to participate democratically in decision making, thus empowering and giving them a voice in their communities (Smith & Sobel 2010). Place-based education is not a new field; it has been commonly used by social studies, language and arts teachers who adopted the practice from historians and anthropologists (Smith & Sobel 2010).

Notwithstanding the merits of place-based education, David Gruenewald (2003) illustrates the limitations of this type of education by suggesting a combination of the former and a concept called critical pedagogy. Critical pedagogy is mostly credited to a Brazilian educator, Paulo Freire. Freire suggests that people behave the way they do because of the conditions of a place

which influence their behaviour and the people, in turn, shape these places (Gruenewald 2003). This assertion is supported by Tuan (2004) who states that a place contributes to shaping the values and beliefs of a person. Additionally, reflecting on one's behaviour means reflecting on the places where one lives; hence reacting to one's situation is a result of human nature (Gruenewald 2003).

Bender (2002) explains further that an individual's perception of a place varies from one person to another due to differences in culture, power, and gender roles, among others, and therefore can influence how one interacts with a place. Therefore, Freire challenges students and teachers to examine and question the dominant powers that bring about inequalities among people in a place and how this results in different perceptions of and interactions with a place by individuals (Gruenewald 2003).

In light of this, consider the ideas of Freire to engage students in what he calls 'conscientizacao' which makes people consider the social, political and economic context of a place and encourages them to take action against the dominant powers that suppress their culture and meaning in life (Gruenewald 2003).

According to Smith and Sobel (2010), students and teachers who are able to establish the link between environmental issues and social issues are the best ambassadors to promote environmental sustainability and social well-being through their beliefs, attitudes and actions.

In the context of critical place-based education, students and teachers are challenged to examine their values and beliefs so that they can ask themselves what they can change or maintain in their lives and local places (Gruenewald 2003). This kind of pedagogy is important because it reduces the dominant powers in place-based education and promotes the social and ecological well being of a place (Gruenewald 2003). According to Gruenewald's (2003) analysis, when critical pedagogy and place-based education are combined, they advance into a critical place-based education.

In view of this, Wakeman (2015) suggests the need for a partnership between diverse stakeholders such as environmental scientists, social activists and teachers to ensure the social and environmental well-being of a place. A critical place-based education thus challenges educators, students and environmentalists to consider the socioeconomic context of a place in decision making and brings attention to the fact that environmental sustainability cannot be achieved when there exist social injustices (Gruenewald 2003).

Critical place-based learning goes a step further beyond place-based education by examining the kind of education that is appropriate for a particular place by integrating local culture and making the connection between the environmental, social, and cultural context and the powers in an education system (Gruenewald 2003).

Allan (2008) calls for the removal of barriers such as financial problems, strict formal practices, competition and result-oriented processes and suggests a more open, relaxed learning which ensures success for all students. Moreover, an education which promotes inclusion can be achieved when teachers first examine themselves and are open to new ideas by becoming explorers and learners themselves (Allan 2008).

Duxbury and Gillette (2007) emphasise that community culture development is gradually becoming one of the fourth pillars of sustainable development which include environment,

social and economic aspects. Duxbury and Gillette (2007) point out that the social and cultural development of a place results in the improvement of the conditions of a place and the standard of living of its citizens, thus fostering a sense of attachment to a place and promotion of the well-being of the community. In turn, creating a sense of a place in a community creates a democratic environment and empowers citizens to participate in decision making regarding their own resources and future (Duxbury & Gillette (2007).

2.3 How to make children develop love for a place and nature

The National Environmental Policy of Ghana states that some environmental challenges that Ghana faces include desertification, deforested land, and loss of biodiversity, among others (MESTI 2012). Rodenburg (2017) reports that educators often overburden students with information on environmental problems without considering the interests of the students in such issues; therefore, this situation can make students feel powerless and uninspired to act (Sobel 1991). In view of this, Mantere (1998) emphasises that teaching environmental topics to students could become complex and boring for them. Using art, however, can make topics exciting and attractive to students. Therefore, it is fundamental for the education system to develop a more organised learning method that connects to the interests of children at various stages of development (Rodenburg 2017).

Sobel (1991) emphasises that it is impossible for children to act to protect their environment when they have no love for their natural environment and local places (Sobel 1991). Therefore Rodenburg (2017) suggests that storytelling can be useful in helping build deep relationships between young people and their local place (Rodenburg 2017). This is because children love stories; hence teachers can use the story of a place to give young people a sense of their relationship to a local place (Rodenburg 2017). Somerville (2010) supports this fact by pointing out the attributes of story telling such as the spoken word, visual language, drama and pictures which are attractive for young people. Additionally, story telling can be used to communicate the ideas of artists, policy makers and environmental educators (Somerville 2010).

2.4 The arts

Mantere (1998) draws attention to the fact that humans see themselves as separate from nature and hence they feel superior to exploit the nature around them and these attitudes become a barrier for one to respect and live in harmony with nature. In his view, art can close that gap because the arts connect to the feelings of a person (Mantere 1998). Moreover, Mantere (1998) supported the view of the American philosopher James Hillman, who said that combining the arts with different subjects can make topics more interesting and attractive for students. In his work, Mantere (1998) illustrates how teachers can combine art-related pursuits like storytelling, excursions to view nature and photography with topics taught in class to make environmental issues more interesting to students. Furthermore, Mantere (1998) mentioned that to ensure a deeper meaning to issues, students must see themselves as part of a story.

Art can also be used to explore and describe the sensitivity of materials in the environment through feeling, touching and shaping into various forms (Inwood 2007). Art thus has the potential to make students develop love for nature or a place as well as their values and identities (Gibbons 2015). In this context, it is important that students engage with the work of sustainable artists who believe the work they create shouldn't harm the ecosystem or the well-being of others (Fowkes & Fowkes 2010).

Art can be used to create links between different subjects such as science, history, mathematics, culture and literature (Gibbons 2015). Through this multi-disciplinary approach, students realise the connections between different topics taught in class, resulting in a deeper understanding and relevant learning (Gibbons 2015). For instance, art educators who pioneered the integration of arts into the education curriculum in Chicago are developing education curricula by finding similarities between the arts and a more formal academic activity and teaching them together (Rabkin & Redmond 2006).

2.5 The potential of art in the education curriculum

Rabkin and Redmond (2006) affirm the fact that art plays an important role in environmental education, and hence should be explored in the education curriculum because art can be used anywhere, even in poorer communities' schools (Rabkin & Redmond 2006).

Eisner (2002) presented examples of the intellectual dimensions of arts and credibly argues for making the arts fundamental in the education curriculum.. They include the following:

- Art promotes independent and personal judgement among students.
- Arts teaches students diverse ways of solving problems.
- Art promotes discovery as a result of engaging students in experiences that interact with their feelings. Allan (2008) supports this statement by emphasising that combining arts with other subjects can engage students in experiences unknown to them and result in discovery and give a voice to students and map out their own thoughts (Allan 2008).
- Learning in art involves problem-solving activities which are flexible and dynamic.
- Art teaches students to pay attention to simple, small but unique effects of things.
- Art empowers students to communicate and express their feelings in different ways.
- Art teaching accomodates different views from students and hence teaches students to consider the opinions of others aside from theirs.
- Art teaches students to explore the sensitivity of materials in their environment.
- Art breaks barriers for students to express themselves without using words, numbers or languages.

2.6 Transformative power of education for sustainability and tacit knowledge

UNESCO (2017) emphasises that educators play a key role in education by empowering students to be ambassadors for change, which is significant in achieving sustainable development goals. However, an important factor of this success is that teachers who reduce their controlling powers and engage in democratic learning where students lead the way in learning and are engaged in problem-solving activities will be better able to help students make sound decisions and act to ensure sustainable development (Jónsdóttir 2017).

Jónsdóttir (2017) emphasises the importance of engaging learners in a practice called Education for Sustainability (EfS). EfS raises awareness about the issues of a place and at the same time recognises that their fundamental causes, such as social, political, economic and environmental factors, are connected (Jónsdóttir 2017).

An article by Jónsdóttir (2017) focused on an example of education for sustainability in a project developed in the Botanical Garden in Reykjavik, Iceland. The project involved collaboration between the Iceland Academy of Arts, 5th grade students at a local school, the Botanical Garden, pre-service teachers, and the Children's Cultural festival. The students were

involved in EfS activities such as exploring their sensory perception through observing, hearing and touching materials (Jónsdóttir 2017). She noted that EfS closed the gap between theory and real experience by involving students in experimenting with theories through creative arts.

Furthermore, Jónsdóttir (2017) emphasised that pre-service teachers organized learning for students by engaging them in hands-on activities based on their earlier experiences. Again, Jónsdóttir (2017) notes that the project connects students to real issues in their local community by providing opportunities to explore and interact with the environment in the Botanical Garden. In the project, both teachers and students are learners and hence promoting a democratic way of learning. The pre-service teachers are thus empowered to engage with this kind of approach in their future teaching practice (Jónsdóttir 2017).

Jónsdóttir (2017) also emphasised that science and art education, when combined, result in integrated knowledge. Therefore, such an approach engages students in problem solving issues in their surroundings and enhances interaction between students and nature and provides a platform for learning through innovative, attractive and interesting activities (Jónsdóttir 2017). Additionally, art closes the gap between science education and the real world experiences of students by approaching scientific topics in a creative way that connects to students' everyday experiences. In view of this, Jónsdóttir (2017) notes that the project provides opportunities for art educators to consider how interesting activities that are relevant for students can be embraced in the school setting. The programme ended with an exhibition where parents were invited to see the art works made by students, harnessing their tacit knowledge and aesthetic experience.

Jónsdóttir (2017) highlights an interesting aspect of EfS called tacit knowledge, an ideology attributed to Michael Polanyi. Polanyi (2004) defines tacit knowledge as personal knowledge which is unwritten, without rules, and involves informal, hands-on skills (LSE n.d). Tacit knowledge is related to learning in apprenticeship where students learn from their master by observing through body language and hands on experience (LSE n.d.). Polanyi's motivation is that we recognise the importance of this kind of informal and personal knowledge and change the hierarchy that undervalues hands-on skills and informal knowledge (LSE n.d). Smith (2003) highlights Polanyi's (2004) statement that tacit knowledge, which is secret and only known to the person, forms part of her/his values and identity. Hence it is the responsibility of educators to unearth this hidden knowledge (Smith 2003). Jónsdóttir (2017) supports this point by stating that revelation of tacit knowledge which is unknown to outsiders, but known to the bearer, depends on motivation, beliefs and social context (Jónsdóttir 2017).

2.7 Collaboration between artists, environmentalists, educators and the community

Inwood (2007) underlines that a partnership between artists, teachers and their local communities can help develop an eco art education that can challenge the power structure of education. For instance, British artist, Andy Goldsworth, and American artist, Helen Mayer, among others, have used their creative art work to highlight locally based and environmental issues, subsequently reaching a wide variety of audiences which scientists have not been able to do before (Inwood 2006). Therefore, Inwood (2007) supports the argument of some educators who hold the view that environmental stewardship cannot be imparted to students unless a multi-disciplinary approach is used to link environmental issues with other subjects. Furthermore, Inwood (2007) notes that the arts can be used to achieve this connection.

Another example of artistic collaboration is reported in a study by Asante and Asare (2015) on indigenous mural wall paintings practiced by local women from Sirigu in the Upper East region of Ghana. The paintings are done by a group of women who cooperate together and use their skills to paint images on walls that portray their cultural identity (Asante & Asare 2015). The painting materials and dyes used by the women are environmentally friendly, made from soil, charcoal, millet combs and feathers (Asante & Asare 2015). During the mural painting the women who do not participate in the art work offer moral support to the artists by singing, clapping and dancing, which promotes social cohesion and unity of place (Asante & Asare 2015). The artists use their creativity and skills to create art which portrays the traditional beliefs and values of the community, thus ensuring that both the needs of viewers and artists are met (Asante & Asare 2015). This kind of traditional mural art painting can be used as a tool to pass down traditional knowledge and the culture of a community to the younger generation (Asante & Asare 2015). It can also be used as a tool for the inclusion of people who are usually discriminated against in society through fostering an individual's creativity and collaborative arts (Asante & Asare 2015).

Another collaboration between artists, schools and the community as reported by BBC news is revealed in the activities of a local NGO in Ghana called Hipsters of Nature (Parkinson 2016). The NGO collaborates with local artists and designers to raise awareness of excessive consumption and plastic pollution in Ghana. With the support of sponsors, artists and the NGO organise workshops for students on recycled arts and crafts. Students are able to make their own designs after the workshop.

Using technology, an educational music project called Biophilia spearheaded by the musician Björk Guðmundsdóttir in Iceland and other countries, also makes use of collaboration between artists and educators (Coleman 2014). In collaboration with scientists and teachers of music, science and technology are used at the same time to explore creativity and learn about nature (Coleman 2014). The project was developed for students between the ages of 10-12 years (Coleman 2014). The project involves students using touch screen iPads to create music and experience the relationship between music, science and mathematics (Coleman 2014). The project started a year after the introduction of iPads and therefore the project became very popular among young people (Coleman 2014).

Inwood (2007) emphasises that eco art combines arts with environmental education by creating awareness and engaging learners in environmental issues. It is a creative and dynamic way of promoting environmental education and environmentally literate citizens by enriching the traditional way of teaching science with art. Inwood (2007) further notes that involving art ensures a holistic education because it enriches science education by harmonising the old way of learning, which focuses on intellectual development, with creativity and emotional development.

2.8 Education and experience

Theories of critical place-based education reflect those of educational philosopher John Dewey. Dewey affirmed that education should train students to learn not only for the future but to apply learning to solving problems in their present situation (Smith & Sobel 2010).

Dewey (1938) emphasised that learning should be continuous and involve interaction with the learner's personal needs and capabilities to create relevant experiences. He pointed out that experience is clearly linked to interaction between people, and the environment and materials

they explore and experiment with (Dewey1938). Moreover, learning should be continuous, because when an individual passes from one situation to another, his environment expands and what he has learned in the way of knowledge becomes an instrument for dealing effectively with events that follow (Dewey 1938).

According to Dewey's pedagogy (1938), it is important for teachers to use new events or activities to relate to past experiences of students, thus setting the ground for further expansion of experience in the future. Therefore, it is important for the teacher to be aware of the capacities, needs and past experiences of the learner. Failure to do so may make an experience non-educative (Dewey 1983). Educational experiences should involve teachers reducing their power as instructors, so that instead they become learners themselves and give opportunities for all students to contribute in leading the direction of learning (Dewey 1938). However, Dewey (1938) emphasised that the teacher should not withdraw entirely from supervising students but rather guide them in learning.

2.9 Learning strategies for environmental education, citizenship and sustainability

Kozak and Elliot (2014) suggested a seven point framework for learning called *Connecting the Dots*. This framework helps us to answer the question: what are the learning methods in environmental education that can make students become engaged and active citizens involved in achieving environmental, social and economic sustainability?

The framework suggested by Kozak and Elliot (2014) includes the following:

- Learning where the local community is used as a classroom. With this kind of learning students investigate issues in their local communities and are exposed to the culture in their local community. This results in authentic knowledge for students and gives them opportunities to expand their knowledge outside the classroom. It involves physical movement, hence promoting the physical well-being of students. It also promotes inclusive learning because it involves exploring all the senses of the body.
- Connecting students' real life issues to learning. This kind of learning involves engaging students in activities that are valuable to them. This is achieved when students interact with people in their communities or participate in research outside their classrooms.
- Connecting many branches of knowledge to learning. It involves identifying the similarities in subjects and teaching two or more subjects at the same time. This kind of learning considers the different interests of students and helps students to realise the linkages or connection between topics.
- Acting on knowledge gained. This kind of learning takes students beyond identifying a problem to finding solutions. Students are involved in problem solving and issues that are related to their everyday life. This kind of learning benefits the students and their community. Students are empowered when they take actions to solve problems in their community. This type of learning serves as a potential for collaboration between students and the community. It also helps students to develop morals and values. It empowers students to advocate for environmental protection and the social well-being of their communities.
- Learning which is guided by questions asked by the students. The teacher explores the questions asked by students by assisting them to answer the questions through group or individual experiments. This kind of learning promotes critical thinking and analysis by students and enhances their problem-solving skills. It is a learning process which trains

students to be entrepreneurs and independent in thinking. It promotes cohesion and team skills among students when they are involved in group experiments.

- Learning where the teacher plays a role as a facilitator and gives opportunities for students to lead the way in learning. It promotes democracy in schools and encourages students to be active participants. It teaches students the skills of negotiation and benefits of collaboration.
- Learning where different opinions, whether positive or negative, are considered and analysed. This learning teaches students to respect different views of others. It provides more alternative solutions to problems. It discourages self-centredness among students and encourages the attitude of fair-mindedness in judging others' values and beliefs. It makes students receptive to innovative ideas and helps them examine their values and beliefs, which can result in a change of attitude.

2.1 Gender issues

A study was conducted in the Eastern region of Ghana by Boateng and Ampofo (2016) on how parents contribute in forming gender roles for boys and girls. The study showed that between the ages of 6 and 10 years, fathers were responsible for nurturing a male role for boys, usually outdoors. Additionally, the study found that mothers were responsible for nurturing girls in female roles such as domestic chores, which usually takes place in the home (Boateng & Ampofo 2016). Generally, girls are expected to spend more time home helping with domestic chores or are required to come home early to help the mother with domestic chores, while the boys spend more time outdoors exploring (Boateng & Ampofo 2016).

3. METHODOLOGY

In this study, I used mixed methods, both quantitative and qualitative research. because this allowed me to take advantage of using multiple ways to explore the research problem.

3.1 Quantitative data

I began by sending out a survey to 60, 6th grade students in Amasaman in the Ga West Municipality, with the help of two assistants. The students were sampled using a stratified method. Braun and Clarke (2013) define stratified sampling as one that takes into consideration different varieties of groups in a population such as gender, etc.

The sample size was derived from three public schools in Amasaman and included the following:

- Amasaman MA1
- Amasaman MA 2
- Amasaman MA 4 Basic/Junior High School (JHS)

Research assistants labelled two papers 1 and 2 and folded them to conceal the numbers written on them. Students were told to pick one folded paper. After that, students with numbers 1 to 10 were given the survey. In each school, two 6th grade classrooms were chosen from which 10 students were randomly sampled to complete a short questionnaire. The questions focused on topics like personal background, learning experiences and attitude towards environmental issues (see Appendix 1).

I selected the three schools because they are in the same area. Moreover, the schools are located about 400 m from the EPA regional office where I work. This was to facilitate the data collection. Figure 2 shows the location of the schools and their distance from the EPA regional office in Amasaman.



Figure 2. Google Pro representation of schools selected for the survey. (Source US Dept. of State Geographer, Data SIO, NOAA, U.S. Navy, NGA, GEBCO taken on 10th August 2017)

The survey included closed questions that resulted in numerical data of the kind that is usually analysed using statistics (McLeod 2008). In view of this, the quantitative data collected was analysed using statistical methods with Microsoft Excel.

3.2 Qualitative data

In this case study, data was connected to suggestions made by the respondents. This connection was made following the data collection phase, as themes emerged. I selected methods that would give me in-depth information on individual motivations, values and approaches. That kind of information is the key to understand how I can transfer and adapt what has been done in Iceland in to the settings in Ghana.

A qualitative methodology was chosen because this approach involves getting a deeper understanding of the ideas of respondents. It includes open-ended questions which are analysed based on the themes discussed by the respondents (McLeod 2008). In general, qualitative research methods provide meaning to participants' own experiences rather than having it directed by a researcher (Braun & Clarke 2013). When selecting the people to interview, I got advice from my supervisor who is an assistant professor of art education at the Iceland Academy of the Arts and a specialist in education for sustainability. She gave me contacts to interview relevant experts in the field of art education in Iceland.

Qualitative research involves asking respondents a series of open-ended questions for them to answer in their own words (Braun & Clarke 2013). In view of this, open-ended questions (Appendices 2 and 3) were used for the artists and art educators to get an in-depth understanding about the kind of approaches that they use and their recommendations for using

art as a medium in environmental education. I gave the interviewee time to discuss the questions in depth, which is necessary in a qualitative approach to generate detailed and in-depth information from each participant's own experience (Braun & Clarke 2013).

The duration of each interview was between 30 to 60 minutes and they were carried out in different settings, ranging from a home environment to public places.

3.2.1 Interviews in Iceland

The interviewees in Iceland included:

- Curver Thoroddsen, an art educator who is involved in the Biophilia project.
- Helga Arnalds, who works in theatre and art based on nature.
- Þorbjörg Arnórsdóttir, a tour guide at the Þórbergssetur museum. The museum is located between Skaftafell Park and Höfn. The museum was built in memory of author Þórbergur Þórðarson in 2006 (Þórbergssetur 2014). The exhibitions in the museum show the life of the author from childhood and a history of the culture of Hali town, Iceland (Þórbergssetur 2014). Arnórsdóttir uses storytelling and exhibitions at the museum to inform tourists about the history, nature and culture of her town.
- Guðný Rúnarsdóttir, a visual artist, who is an art teacher at the Reykjavík Art School who uses outdoor artistic learning to create connections to nature.
- Helga Árnadóttir, a park manager at Vatnajökull National Park in Iceland. The park has beautiful landscapes formed by moving glaciers, geothermal activity and volcanic eruptions. Besides that, the park has waterfalls and is rich in biodiversity (Vatnajökulsþjóðgarður n.d.). Furthermore, there is an educational programme for school children that visit the park.

The seven learning methods described by Kozak and Elliot (2014) were investigated in the interviews with the six respondents in the field of art education, national park management and museum education.

3.2.2 Interviews with artists in Ghana

Having conducted interviews with the Icelandic artists and educators their responses led me to formulate open-ended questions that I sent through the internet to three Ghanaian artists. The artists were selected for the interview because they use art in raising awareness about environmental and social issues in Ghana. Moreover, I have personally worked with them in environmental art education projects. Previously, I intended to interview six artists; however, only three responded.

The artists interviewed in Ghana included the following:

- Rufai Zakari is an artist who sometimes uses waste to create art and raise awareness of plastic pollution in Ghana (threesixtyGh n.d.). He is involved in organising workshops for students using waste.
- Abigail Asare-Bediako, a fashion designer who uses waste to make recycled art-crafts and is involved in organising workshop for students (Parkinson 2016).
- Bright Ackweh, an artist from Ghana who creates work on social, environmental and political issues in Ghana.

The interviews with the artists in Ghana were aimed at finding out about their artistic approach to environmental education and to discover how they could use their art to promote environmental awareness and perhaps contribute to an environmental art festival in Ghana. Follow-up conversations on the Internet were held with artists to give in-depth information when statements made were not clear (see appendix 3 for questions).

3.2.3 Observation

Observations are a good way to see participants' behaviour and how they communicate in the context of their natural surroundings (Lichtman, 2010). Not only is the observer able to see how participants behave or interact, but observations and interviews can be combined to obtain in-depth data (Creswell, 2008). I combined interviews and observation to collect data at a festival, a national park and a museum.

For instance, I observed a music festival in Sweden to investigate whether it had the potential to promote inclusion and connect people to nature and their local places. The festival was included in the study because I was invited to perform my environmental songs and do a presentation about my work with Hipsters of Nature. The festival was included in this study because the theme for the festival was based on environmental sustainability and gender equality. In view of this, I took the opportunity to observe the activities at the festivals. Data was collected through conversations with festival organizers, artists, participants and personal observation of activities at the event. I recorded field notes and took pictures during the period of the festival. Pictures of the festival are illustrated in Figures 3 and 4.



Figure 3. Picture on the left shows children climbing trees and on the right shows children making their own paintings (Photos: Dossah, 14 July 2017)



Figure 4. Picture on the left shows the green outdoor venue and on the right shows children playing in bales of hay (Photos: Dossah, 14 July 2017).

Furthermore, I observed exhibitions at the Þórbergssetur museum to investigate the potential of storytelling and culture of place in environmental education. The museum was included in the study because the United Nations University Land Restoration Training (UNU-LRT) Programme organised an excursion for students to the museum to know more about the culture of Iceland and nature conservation, which has been highlighted at the museum. I took part in the excursion and observed the settings at the museum. Data from the museum was collected through personal and internet interviews with the tour guide. I recorded field notes and took pictures during the visit to the museum (Fig. 5).



Figure 5. An exhibition of an old stall for cows owned by Þorbergur Þórðarson family (left) and book sculptures based on books written by Þorbergur Þórðarson (right). (Photos: Mwathunga, 29 June 2017)

Additionally, I observed the natural setting at the Vatnajökull National Park in Iceland (Fig.6) to investigate whether visits to protected natural places like that could help connect people to nature. The national park was included in the study because the UNU-LRT Programme also organised an excursion for students to the National Park to know more about the ecosystems in the park and some environmental challenges like retreating glaciers. Therefore, I participated and took the opportunity to interview the park manager personally and through internet interviews concerning how visiting protected areas can lead one to connect to nature.



Figure 6. The glacial mountains at the Vatnajökull National Park National Park. (Photos: Dossah, 28 June 2017)

3.2.4 Analysis of qualitative data

Some of the interviews were recorded on the phone and transcribed. Transcription is an important part of qualitative research where audio is recorded from interviews and later played and written in the form of a text (Braun & Clarke 2013). This method helps one to remember exactly what respondents mentioned in interviews (Braun & Clarke 2013). Braun and Clarke (2013) described a method called coding for analysing qualitative data. Coding is a process of identifying aspects of the data that relate to your research question (Braun & Clarke 2013).

In case studies, data from interviews are organized by coding before developing them into themes (Yin, 2009). After that, the researcher thoughtfully analyses the developed themes to find meaning related to the purpose of the research (refer to Appendix 4 for coding results). In view of this, after the initial division of the information I got from the interviews, I colour-coded the themes that were concerned with my research questions. Furthermore, I grouped the data on a computer and selected phrases or sentences associated with the themes which I added to the results in section 4.2, as emphasized by Lichtman (2010). Using a computer, I organized the data and selected the relevant phrases and words associated with the concepts.

As data was analysed, attempts were made to match patterns that appeared in the data to the theoretical propositions of the case study. The themes that emerged in this study served as answers to the research questions posed in the introduction section. The seven learning frameworks described by Kozak and Elliot (2014) were related to the themes that emerged in the interviews.

3.2.5 Limitations

Due to limited time and resources other important stakeholders such as the teachers, policy makers and EPA were not studied. Secondly, 60 students were selected; however, there was a mistake with one of the questionnaires, thus reducing the number to 59. Furthermore, due to my location in Iceland, I was not able to conduct the survey with students personally and I therefore employed two assistants in Ghana to help with the data collection.

4. RESULTS

4.1 Survey

The following questions were investigated in the survey:

- What do students study about nature?
- How and where do they study about nature?
- Have the arts have been used to teach about nature?

It was a pleasant surprise to see that 61% of the 6th grade students claimed to learn about nature in their school more than once a week or many times each week. Equally it was good to see that none of the students who participated in the survey mentioned that they never studied about nature in school. Figure 7 shows the bar chart distribution of students' responses regarding whether they learn about nature in school.

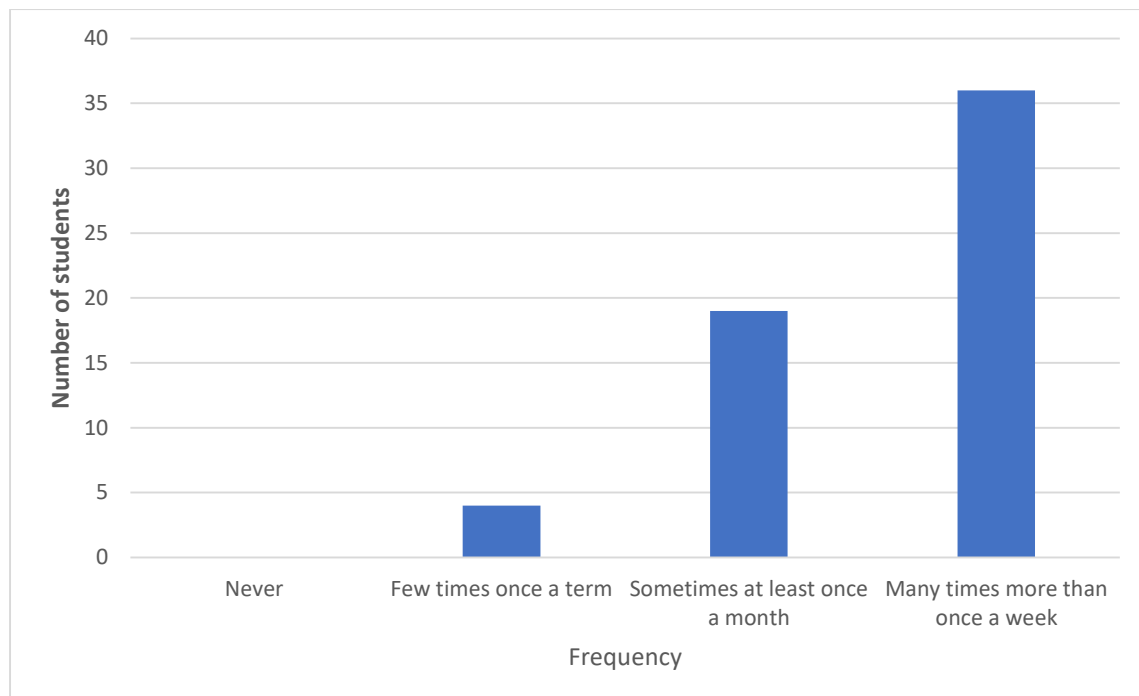


Figure 7. Bar chart distribution of students' responses regarding whether they learn about nature in school.

Table 1 shows the responses of students regarding subjects in which they learn about nature. Some students selected more than one answer. It was interesting to see that the subject that most frequently included the study of nature was Religious and Moral Education. Creative arts and after school programmes were the least selected by students. Both subjects have the potential of focusing more on environmental education, perhaps by connecting several subjects through a common theme as suggested by Kozak and Elliot (2014).

Table1. Responses of students about subjects in which they learn about nature.

In which subject?	No. of students
Religious and Moral Education	35
Social Studies	22
General Science	15
Mathematics	10
English Language	7
Physical Education	3
Creative Arts	2
After school programme/Extra curriculum	2
No response	0

Table 2 shows the frequency with which students learn about nature outside of the school. The most popular response of students was that they sometimes learned about nature outside of the school. Interestingly, the findings showed that 83% of boys learn about nature outside of the school, whereas 72% of girls mentioned they learned about nature f outside the school. This result shows that there is potential for teachers to enhance learning about nature outside classrooms for all students, perhaps by equally engaging both boys and girls in projects outside their classrooms or within their local communities, as suggested by Kozak and Elliot (2014).

Table 2. Response of students with regards to whether they learn about nature outside of the school.

Do you learn about nature outside of school?	No. of students	Girls	Boys
Never	13	8	5
Few times once a term	10	7	3
Sometimes	19	10	9
Many times	17	4	13
Total	59	29	30

Table 3 shows the response of students with regards to where they receive information on nature. Some students selected more than one answer. The most popular response of students was that they received information about nature from their mothers and fathers. Curiously, 41% of the students mentioned that they received more information about nature from their mothers, whereas 39 % of the students mentioned that they received information about nature from their fathers. There was no significant difference between the responses of boys and girls. These results show that there is potential for students to learn about environmental issues outside their classrooms, perhaps when schools collaborate with parents or families of students and their community, as suggested by Kozak and Elliot (2014).

It was good to see that 15% of the students mentioned that they learn about nature from stories. The results show that story telling can focus on environmental education, perhaps by using stories of students or local communities, as mentioned by Somerville (2010). Additionally, these stories can be followed up with investigations in the community by students, as suggested by Kozak and Elliot (2014).

Table 3. Response of students regarding where they receive information on nature.

From	No. of students	Girls	Boys
Mother	19	9	10
Father	18	6	12
Grandmother	4	1	3
Grandfather	6	2	4
Siblings	5	3	2
Other relatives	5	2	3
Friends	12	3	9
Church	13	7	6
Clubs	4	3	1
Stories	7	4	3
TV	17	10	7
Newspapers	7	6	1
Internet	5	1	4
Music	1	1	0
Radio	5	2	3
No response	13	8	5

Table 4 shows the response of students regarding how often they go outside the classroom with their teachers to learn. Curiously, MA4 school students gave the most popular response that they never went outside of the classroom with their teachers. Interestingly, students from MA2 and MA1 schools frequently responded that they sometimes went out of the classroom. The results show that there is potential for outdoor learning to integrate environmental topics where students observe, explore things outside their classrooms and perform hands-on activities, as suggested by Kozak and Elliot (2014).

Table 4. Response of students on the number of times they go outside classroom lessons with their teachers.

How often do you go out of the classroom with your teacher to learn	No. of students	MA 1	MA2	MA4
Never	19	3	6	10
A few times once a term	15	5	2	8
Sometimes at least once a month	16	8	7	1
Many times more than once a week	9	4	4	1
Total	59	20	19	20

Figure 8 shows the response from students regarding what they learn when they go out to study. The most popular responses from students were that when they went outside to study they learned about natural science. The findings show that there is a potential of integrating environmental topics across the various disciplines and connecting different subjects and establishing linkages between them to ensure integrated learning, as reported by Kozak and Elliot (2014).

Moreover, 11 out of 43 students mentioned that they learned about their communities when they went out to study. Therefore, there is a potential of engaging students in investigating and

solving real environmental issues in their communities, perhaps through collaboration and communication between students and their communities, as suggested by Kozak and Elliot (2014).

Furthermore, 4 out of 43 students mentioned that they learn about culture when they go out to study. This result shows that there is a potential of integrating traditional knowledge that protects the environment into learning, perhaps by engaging students in issues about their culture, as suggested by Kozak and Elliot (2014).

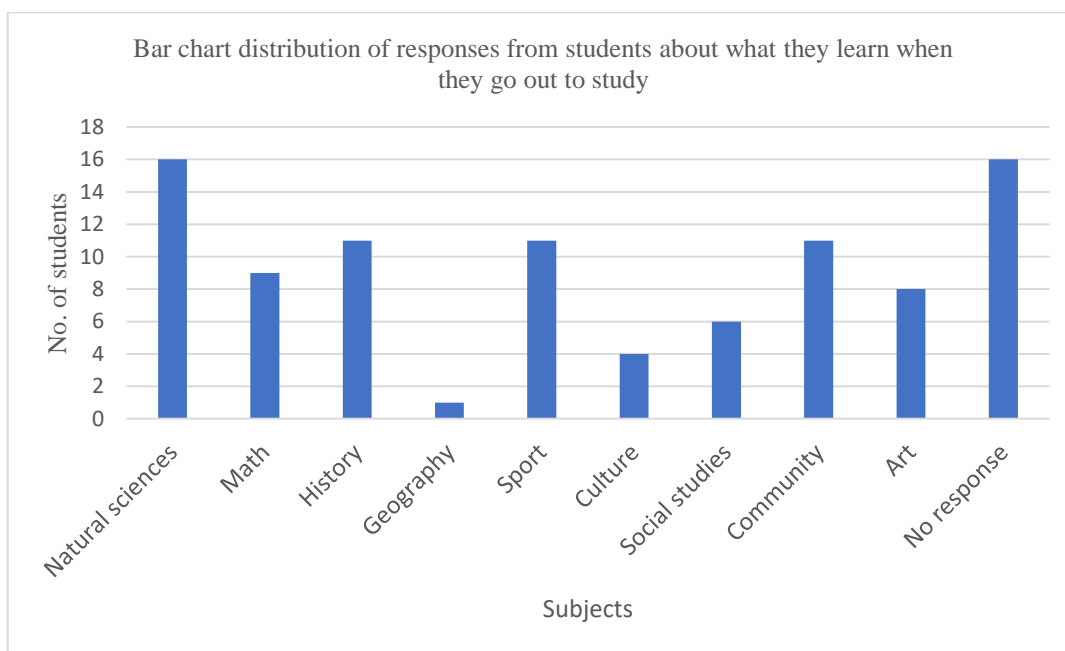


Figure 8. Response of students regarding what they study when they go out of their classroom to learn.

Table 5 presents responses from students regarding whether they can connect the things learnt from schoolbooks to their lives at home. It was good to know that the most popular response of the students was that they could connect the things learnt from school books to their lives at home many times. Additionally, 44% of students attested to this fact. Interestingly, there was no significant difference between the responses of boys and girls. The result shows that books that focus on environmental issues have the potential of promoting environmental awareness among students. However, these books should be relevant to the real life experiences of students, as suggested by Kozak and Elliot (2014).

Table 5. Responses from students regarding whether they can connect the things learnt from schoolbooks to their life at home

Can you connect the things you learn from the schoolbooks to your life at home?	No. of students	Girls	Boys
Never	1	0	1
A few times	8	4	4
Sometimes	24	13	11
Many times	26	12	14

Table 6 represents the responses of students regarding whether they can use the things learnt in class to solve things outside of school. The most popular response of students was that they could sometimes use the things learnt in class to solve things outside school. Additionally, 27 out of 58 students attested to this fact. The results show that there is a potential for students to use classroom lessons to solve environmental problems in their homes and beyond, perhaps by engaging students in action related activities, as suggested by Kozak and Elliot (2014).

Table 6. Response of students regarding whether they can use the things learnt in class to solve things outside of school.

Can you use the things you learn in school to solve things outside of school	No. of students
Never	3
A few times	10
Sometimes	27
Many times	19
No response	1

Figure 9 shows a bar chart representation of the responses of students regarding where they learn about nature. The chart illustrates that the most popular response of students on where they learn about nature was from books. The less popular responses were that students learn nature from art and videos. However, the results show that there is a potential for promoting environmental awareness among students, perhaps by combining the attributes of pictures, art, and videos with books that connect to different interests of students, as suggested by Kozak and Elliot (2014).

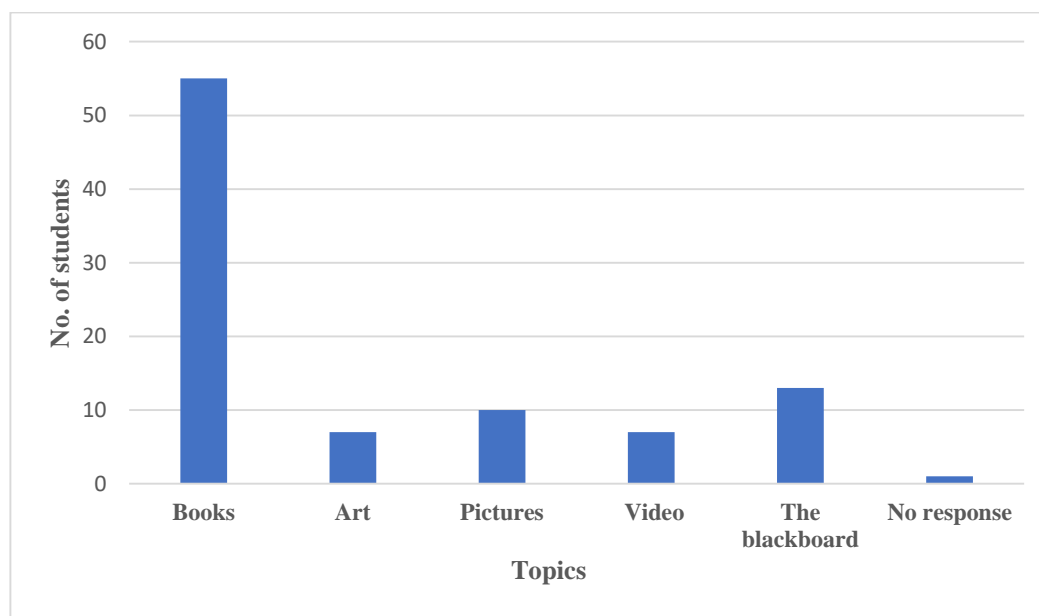


Figure 9. Bar chart distribution of where students study about nature.

Table 7 represents responses of students regarding whether they ever use art to reflect on other subjects. The most popular response of students was that they sometimes use art to reflect on other subjects. Additionally, 36% of students attested to this result. Furthermore, the results show that arts have the potential of reflection on environmental issues, perhaps by using it as

a medium to discover different opinions of students on issues, as suggested by Kozak and Elliot (2014).

Table 7. Responses of students regarding whether they ever use art to reflect on other subjects.

Do you learn about nature outside of school?	No. of students
Never	12
A few times	14
Sometimes	21
Many times	11
Total	58

Table 8 represents responses from students regarding what makes them feel best when learning. Some students selected more than one answer. The most popular response from students was that they feel best when learning in silence. However, it was good to see that 51% of the students mentioned that they feel best when they learn about Ghana. This result shows that there is the potential of integrating environmental issues in learning, perhaps by engaging students in environmental issues that are real in their own communities, as suggested by Kozak and Elliot (2014).

Table 8. Responses from students on what makes them feel best when learning.

When I am learning I feel best when I am...?	No. of students
Sitting on the floor	0
When I connect to my life	1
Outside	1
When I am solving problems	8
With a friend	12
Learning about Ghana	30
Sitting at a desk	30
In silence	33

Table 9 represents responses from students regarding whether it is important to protect nature. The most popular response from students was that they agreed that it is important to protect nature. Additionally, 52 % of the students attested to this fact. Interestingly, 3% of the students strongly disagreed that it is important to protect nature. The result shows that there is a potential of analysing environmental issues in class, perhaps by consideration and assessment of different opinions from students, as proposed by Kozak and Elliot (2014).

Table 9. Responses from students regarding whether it is important to protect nature.

I think it is important to protect nature	No. of students	Boys	Girls
Agree	32	18	14
Strongly agree	24	11	13
Disagree	1	1	0
Strongly disagree	2	0	2
Total	59	30	29

Table 10 represents responses from students regarding whether they are capable of doing things to protect nature. The most popular response among students was that they agree that they are capable of doing things to protect nature. Interestingly, 51% of the students agree they are capable of doing something to protect nature. Both boys and girls equally agree that they are capable of doing things to protect nature. The results show that there is a potential for students to act to protect their environment, perhaps when teachers give students equal opportunities to bring out suggestions about solving problems, as suggested by Kozak and Elliot (2014)

Table 10. Response from students regarding whether they are capable of doing things to protect nature.

I am capable of doing things to protect nature	Number of students	Boys	Girls
Strongly agree	23	10	13
Agree	30	15	15
Disagree	3	3	0
Strongly disagree	3	2	1
Total	59	30	29

Table 11 represents the responses of students on whether how they treat nature can have an effect on future generations. The most popular response among students was that they strongly agree that how they treat nature can have an effect on future generations. In view of this, 29% of the students attested to this statement. Furthermore, 19% of the students strongly disagreed. Interestingly, girls took a stronger position to support this statement. The result shows that there is a potential for analysing environmental issues in class, perhaps by consideration and assessment of different opinions from students, as proposed by Kozak and Elliot (2014).

Table 11. Responses of students regarding whether how they treat nature can have an effect on future generations.

How I treat nature will have an effect on my children and grandchildren in the future	Number of students	Boys	Girls
Strongly agree	17	8	9
Agree	17	12	5
Disagree	14	6	8
Strongly disagree	11	4	7
Total	59	30	29

Table 12 shows the response of students on whether everyone should be able to grow their own food crops. The findings show that 47% of the students agreed that everyone should be able to grow their own food crops. Interestingly, the girls took a stronger position regarding this statement. Additionally, 9% of the students strongly disagreed that everyone should be able to grow their own food. Interestingly, boys took a stronger position to support this statement. The result showed that there is a potential for analysing environmental issues in class, perhaps by consideration and discussion of different opinions from students, as proposed by Kozak and Elliot (2014).

Table 12. Responses of students regarding whether everyone should be able to grow their own food crops.

Everyone should be able to grow their own food crops	Number of students	Boys	Girls
Strongly agree	17	6	11
Agree	27	15	12
Disagree;	9	4	5
Strongly disagree	5	4	1
Total	58	29	29

4.2 Qualitative findings

With the qualitative part of the study, my aim was to explore the views and experiences of artists and art teachers that aim to use art to engage learners in their real situations in life, as emphasized by Kozak and Elliot (2014), and their tacit knowledge, as emphasized by Jónsdóttir (2017).

In the interview data, many themes emerged that I can connect to *the Connecting the Dots framework* discussed in section 2.9.

4.2.1 Integrated learning

When interviewing the Icelandic artists and respondents, it was quite obvious that they all found it important that students should be able to integrate skills and knowledge from all subjects when creating arts, as suggested by Kozak and Elliot (2014). The Biophilia project is a good example. Curver Thoroddsen, who was part of the project, stated that:

“The project was about teaching music and science together at the same time. It helps to have creativity because a lot of kids lose focus after one hour.”

Additionally, Thoroddsen mentioned that:

“After 5years, I found it interesting to teach kids the different topics at the same time. It breaks down the stuff into smaller units. It can also touch upon the teaching theory of many senses, that we can be smart in brains and smart in how you move, music, creativity and many activities people can have.”

4.2.2 Learning locally

All the artists mentioned that it is important for teachers to undertake learning which takes advantage of settings in their local community, nature or outside the classroom, as suggested by Kozak and Elliot (2014). For instance, Helga Arnalds mentioned that:

“Adults go for a hike in the mountains, camping and entertain themselves through nature; kids are similar, they get to know nature through entertainment.”

Arnalds further stated that:

“Young children learn in nature or in direct contact. If we start to observe our close surroundings for example the birds in our garden, without thinking too much, just observing,

we find out that nature is observing us, the birds in the garden are talking about us. They know us better than we know them.”

Additionally, Helga Árnadóttir supported this statement by mentioning that:

“Children should have a chance to experience these protected areas, learn about their uniqueness, and mostly, learn to value and respect their nature and history. I believe, that if children (and grownups!) are given a chance and interpretation, to experience unspoiled nature, they will have a stronger sense of the area and hopefully, stronger will for nature and environmental protection.”

Similarly, Þorbjörg Arnórsdóttir supported this statement by mentioning that:

“I think it’s important for everybody to locate himself in local culture and community and find themselves connected to the environment, their language and their homeland, to know your background, part of it is to enjoy some cultural things or art, like music, literature, painting and also communicate with it, enjoy it, be part of it and find out this is part of me, also nature these wonderful things around, enjoy the moments you have and so on.”

4.2.3 Real world connection

Most of the respondents mentioned that it was necessary for teachers to connect learning to the everyday life experiences of students, thus making learning meaningful to students, as suggested by Kozak and Elliot (2014).

For example, Thoroddsen mentioned that:

“For instance, in Ghana bringing in their realty like dancing, no walls, just go outside then it is not boring”.

He further stated that:

“Because we used applications and iPads and they all looked weird, not like normal instruments like piano or guitar. When I was doing more of this kind of workshop for one week, on the first day, the kid is saying, “I don’t know how to make music”, but they are saying, “I can’t play an instrument”. Everybody can make music, if you use a different tool. Always on day 3 or 4 the kid is saying, “I have done a lot of music and learned a lot about science”. The touch screen is tactile; it is about doing things with your hands.”

Guðný Rúnarsdóttir also stated that:

“I use materials that kids find on the school compound or use in their day to day life.”

Thoroddsen supported this fact by saying that:

“Using simple materials like a one string guitar or do yourself tools. Always when you take the complexity of recording, doing electronic music or learning the piano and chords and making it simple, going to the core of creativity. People are empowered.”

4.2.4 Alternative perspectives

Most of the respondents interviewed from Iceland highlighted the fact that there is no fixed way of learning, but focused rather on incorporating different opinions and methods which lead to critical thinking as emphasised by Kozak and Elliot (2014). For instance, Thoroddsen mentioned that:

“Paulo Freire’s pedagogy is about self-control. The people can follow their custom and say this is who we are, we [are] not going to change, maybe the classroom is not fitting our situation.”

Additionally, Thoroddsen stated that:

“When we were developing this programme, we were thinking that, maybe something else comes or people use topics like maths and knitting or maths and painting.”

Arnalds also stated that:

“So that goes with children also that they have to be allowed to experience things on their own terms.”

4.2.5 Acting on learning

The respondents highlighted the importance of engaging students in hands-on activities that result in the learner creating their own things, as suggested by Kozak and Elliot (2014). For instance, Rúnarsdóttir stated that:

“The students learned from Andy’s work and created sculptures out of snow.”

Thoroddsen similarly mentioned that:

“Three girls were empowered [to] start a band after the project. Two guys also started a band.”

4.2.6 Inquiry

The respondents highlighted the importance of allowing students to find their own answers instead of teachers feeding them with answers, hence leading to creativity and discovery, as suggested by Kozak and Elliot (2014).

For example, Arnalds mentioned that:

“Whatever the medium, I would say listening, experimenting, approaching with an open mind, mind of a beginner is the best way to learn and also to create.”

Furthermore, Arnalds further emphasised that:

“Sometimes we try out many materials before choosing which one is giving us the most. The aim is to use as few words as possible but let the visual language, the interaction between the actors and the material and the music lead us to the performance.”

Rúnarsdóttir also stated that:

“I sometimes take an art work and tell the students to write a poem about it.”

Furthermore, Arnórsdóttir added that:

“Everybody has to find their own truth and beliefs inside in their mind, you have to work with yourself and be your best friend, be glad about yourself. So, stories can open your mind, make interest, give you opportunity to seek for more knowledge, more practice of our mind, new knowledge, more curious about everything.”

4.2.7 Shared responsibility

The respondents in Iceland talked about learning that involves shared responsibilities between students and teachers resulting in confidence building among students, as suggested by Kozak and Elliot (2014).

For example, Arnalds mentioned that:

“Together we are finding out about our surroundings. They are also teaching me a lot.”

Arnalds emphasised that teachers should promote democratic learning. She stated that:

“He just has to be open and observing to what he is doing and to create a condition where curiosity has enough space both for the viewer and the artist.”

For example, Rúnarsdóttir stated that:

“Yes, children should be allowed to lead the way. There are no one right solutions. Group discussions lead to critical thinking.”

4.3 Observation of Backafestivalen, Sweden

Backafestivalen is a local festival organised annually in a small locality in Sweden called Simrisham (Backafestivalen 2017). The 2017 festival was held on the 14th to 15th July in a pasture field enclosed by a forest (Backafestivalen 2017). The people who participated in the festival were local people, especially families including children.

I participated in the festival as an artist by singing my environmental songs and talking about volunteer work that I did with Hipsters of Nature NGO through working with artists to create awareness in Ghana of recycling and urban gardening. The festival included both local and international music, dance workshops, art and painting for children, tree climbing and camping in nature.

It was good to see that parents attended the festival with their children. For instance, there was a tent for children where they could participate in different activities that were of interest to them, such as dancing, tree climbing, drumming, painting and reading. Children made their own paintings. Pictures of children at the festival are illustrated in Figure 4.

Additionally, no alcohol was sold at the festival in order to ensure a child-friendly environment. This approach could be used in Ghana to engage children in outdoor activities to involve them in physical activities and help them develop connections to place and nature, as suggested by Kozak and Elliot (2014).

The festival coordinator, Hanna Hanan Thorstensen, mentioned that Simrisham was one of the municipalities in Sweden that received many refugees from countries like Syria, Somalia, Iraq and Afghanistan. One of the objectives of the festival was to integrate immigrants into the community by encouraging them to participate. Therefore, employment opportunities were provided for some refugees to cook food for the festival crew. Additionally, a young musician who migrated from Iraq to Sweden performed his traditional songs at the festival. The festival ensured equal representation of female to men artists. Furthermore, opportunities were given to locals who are unable to afford the gate fee to do volunteer work to enable them free entry and participation in the festival. These methods could be used to promote inclusion of marginalised people in a community in learning, as suggested by Allan (2008). Furthermore, this approach could be used to fight social injustice in a place which can lead to environmental justice in a place since they are linked (Gruenewald 2003). Additionally, the activities of Backafestivalen support the ideas of Allan (2008) that educators should consider differences among students and remove barriers such as financial differences and involve everyone including marginalised people in society to create equal opportunities for all.

Furthermore, this approach could be used as a tool for the inclusion of people who are usually discriminated against in society through fostering an individual's creativity and collaborative arts, as suggested by Asante and Asare (2015). Additionally this approach could be used to promote alternative perspectives among students so that they learn to respect and consider the opinions of people from different cultures, as suggested by Kozak and Elliot (2014).

Waste bins provided at the festival were labelled for segregation of waste such as glass, paper, bottles and organic waste. It was interesting to see that food vendors at the festival packaged food in biodegradable packaging. It was also good to see that, at the end of the festival, the organisers ensured that the festival venue was tidy and left in its original state. This approach supports Inwood's (2007) statement that artists' work or activities should ensure protection of the environment and preservation of the cultural heritage of a place. Therefore, this approach could be used to promote sustainable arts in Ghana.

It was observed that, young people who had attended the festivals in previous years when they were kids were now volunteering at the festival and helping in organising the event. This approach could be used to empower young people to act in their communities, as suggested by Kozak and Elliot (2014).

4.4. Including Ghanaian artists

Following my interviews with the Icelandic artists and educators and my observations at the music festival, the museum and the national park I drew on the information gathered to interview Ghanaian artists on their ideas of art and environmental protection. For instance, Bright Ackweh stated that:

“I can create art to educate my audience about relevant issues pertaining to environmental protection.”

Additionally, Abigail Asare-Bediako mentioned that:

“Mine is basically holding craft workshops using various waste items as resource material.”

Additionally, Rufai Zakari stated that:

“...as much as we all are very concerned about the environment; we should think of product that are damaging the environment which is hard to do away with it in our daily life. The only way to overcome this problem is to re-use them artistically and has to be sensible in a way to impact society.”

This statement highlights Thoroddsen’s ideas that learning can involve using simple materials that students and teachers can make themselves in their surroundings. Perhaps, teachers and artists can collaborate and involve students in activities like making their own art from waste found in the school compound, homes or their neighbourhood. This activity can help challenge students’ consumption behaviours, as emphasised by Rademaekers and University (2011). Moreover, this activity can connect students to real life problems in their communities, as emphasised by Kozak and Elliot (2014).

All the artists mentioned that they can contribute their artistic skills if any festival is organised in Ghana to promote environmental awareness. For instance, Zakari stated:

“My contribution will be based on using creative thoughts to address and create beauty out of trash in order to give them another chance to live.”

Furthermore, some of the artists emphasised the importance of including traditional or cultural heritage in such a festival. Ackweh, for instance, stated that:

“Drums and musical instruments can be used and fun songs can be composed and taught to the audience.”

This statement highlights Arnórsdóttir idea of the importance of connecting to one’s culture which can make a person develop a sense of love for his local place.

All the artists supported an approach where artists give space for viewers to participate in their work. For instance, Ackweh stated that:

“It is a powerful way to experience art today. Having the audience play a part of the projects leaves more lasting memories of the experience and the communication is better.”

Additionally, Bediako mentioned that:

“Viewer participation is a great way to engage the senses of an audience and ensure that they take more than memories away.”

Furthermore, Zakari noted that:

“In as much as to gain different perspective or experience in a field they have never believe they can do. It is also important to be creative in all you do, because everything is art when you look at it from some point of view.”

The responses from the artist for instance highlight the statement by Arnalds that when organising learning activities for students, she becomes a learner herself and works together with students to investigate environmental issues. This finding shows that the Ghanaian artists are open-minded and receptive to the different opinions of their viewers. Consequently, there is a potential for artists in Ghana to team up with students and teachers to use art to raise awareness about environmental issues in their communities, as demonstrated by Inwood (2007).

Additionally, Ackweh stated that:

“Personally, I think artists can redirect the focus of the community through their work. They can create knowledge and investigate problematic theories.”

Additionally, Zakari stated that:

“It is an artist’s responsibility to use his or her creative ability to transform issues affecting his or her community. But only to those who know.”

These assertions are demonstrated in the activities of Backafestivalen where organizers involved artists to raise awareness on social and environmental issues in the community.

5. DISCUSSION

In this study I attempted to answer the questions: How and where do students learn about nature? What is the role of the arts in environmental education? How can the arts make engaged learners?

Through the survey, the interviews and observations, I isolated some themes I found to be of importance in answering these questions. They include the fact that the majority of students interviewed indicated that they sometimes use art to reflect on other subjects. The survey results show that Ghanaian elementary students are open to ideas that connect the arts to the issues surrounding environmental protection. Furthermore, when students were asked where they study about nature, the majority of them mentioned that they mostly learn from books. Additionally, when the students were asked whether they learn about nature in school, the overall response to the question was positive. The survey showed that students learn about nature many times more than once a week, showing that the teachers at the Ghanaian elementary schools are interested in environmental education. Additionally, it is of paramount importance to empower teachers to transmit their knowledge on environmental issues. The survey shows that a holistic curriculum is central to enhancing students’ awareness of sustainability and environmental protection.

Surprisingly, the response was high from students that they receive information about nature from their families. The results from the survey show that Ghanaian families play a role in engendering the environmental awareness of their children.

5.1 Empowering teachers

Teachers are responsible for impacting knowledge on environmental issues and ensuring that students act on the knowledge received in class; hence they are key to achieving a successful education for sustainability, as reported by Inwood (2007). Therefore, it is important to involve teachers in developing an environmental art education curriculum so that they see themselves as part of the change. Through collaboration, teachers can bring on board their rich experience of intellectual development, perceptions which can be enhanced by ideas of eco artists, as emphasised by Inwood (2007). In view of this, I intend to follow up on the findings of this study with a project in Ghana that can empower teachers through collaboration between art educators, artists and teachers.

To explore future possibilities for my project my supervisors and I had a meeting with the Directorate for International Development Corporation of the Ministry for Foreign Affairs of Iceland to seek grants to support the project in Ghana. The officials mentioned that there are funding opportunities available. However, as part of the requirements to obtain funding from the Ministry, we needed to look for an Icelandic NGO to partner with. Churches and the Red Cross society were recommended as potential partners from Iceland. The funding will be used to pay for transportation of Icelandic educators for sustainability to Ghana, as well as participating artists and NGOs for their role in the project.

A festival like Backafestivalen could be organised in Ghana to promote inclusion and connect students to nature and their local places. The festival could be organised in a natural place like a Botanical Garden and involve collaboration between local schools, artists, teachers. Additionally, the activities of the festival could involve interaction of students and the surroundings in the garden where they are motivated to use their tacit knowledge to solve problems, as demonstrated in the Botanical Garden project by Jónsdóttir (2017). Furthermore, the festival could integrate the cultural aspects of Ghana such as storytelling, traditional mural paintings, drumming and dancing to make activities relevant to the participants, as emphasised by Paulo Freire (Gruenewald 2003).

5.2 Survey with students and interviews with Ghanaian artists

It was interesting to see that there was no significant difference between the responses of girls and boys in the findings. However, the findings in Table 2 showed that boys learn about nature outside the school more than girls do. The reason could be that boys spend more time outside their homes playing, unlike girls who have to help their mothers with domestic chores at home, as emphasised by Boateng and Ampofo (2016) in section 2.1.

Additionally, the findings in Table 4 showed that, unlike the MA4 school, students from both the MA2 and MA1 schools frequently go outside of the classrooms with their teachers to learn. This finding shows that perhaps MA4 students who go out less with their teachers could benefit more from a project on environmental art education.

The findings showed that there are some good structures in place for environmental educational development in Ghana. For instance, there is already a policy for environmental education in Ghana (MESTI 2012).

As mentioned in the discussions, it was good to know from the findings that most students are sometimes able to connect what they study in class to their life at home. Additionally, most

students responded that sometimes they learn about nature at least once a month when they are outside the school. The explanation for this finding could be that perhaps students exercise self-initiative to learn about nature outside of school or may be inspired by their teachers or families.

Interestingly, the findings showed that the children are empowered to protect their environment. Importantly, the findings showed that the children are open-minded and receptive to art. These findings can encourage policymakers in Ghana like the MESTI, EPA and Ministry of Education to integrate art into environmental education. However, teacher empowerment cannot be ruled out because they are key to development of morals among students and making them engaged learners, as emphasised by Inwood (2007). Through teacher empowerment more students will be empowered.

Importantly, the findings showed that the Ghanaian artists interviewed were receptive to working with people; perhaps there is a potential of collaboration between teachers, students and artists in environmental art education.

5.3 Holistic curricula

Miller (2000) supports Gruenewald's (2003) idea that education should be holistic. A holistic curriculum discourages competition and result-oriented learning and rather enhances collaboration among students (Miller 2000).

The Icelandic and Ghanaian experts interviewed highlighted learning methods that, when combined, promote a holistic education.

Furthermore, holistic learning focuses on all aspects of the development of a student such as emotional, physical and psychological aspects (Miller 2000). For instance, Rúnarsdóttir emphasised that her students are involved in physical activities such as making their own crafts. Thus, students are empowered and develop morals, as emphasised by Kozak and Elliot (2014).

Additionally, a holistic curriculum engages students in learning that is relevant to their everyday life by connecting lessons to real issues in their communities and nature through arts and interesting methods. This can be demonstrated in the art works of Zakari, who uses waste materials to create useful and aesthetic art work. This activity can be used to help students reflect on their daily consumption behaviour at home and in school, thus resulting in meaningful learning, as emphasised by Kozak and Elliot (2014). Moreover, Thoroddsen emphasised the importance of creating the links between subjects by teaching two or more subjects together. This can help students to realise the linkages between social, economic and environmental issues, as emphasised by Kozak and Elliot (2017).

Again, holistic education helps students to realise that they are part of nature and the local community (Miller 2000). This is indicated by Árnadóttir in the interview that, when students are given the opportunity to visit protected areas like national parks, they become connected to nature and feel inspired to act to protect it. Furthermore, Ackweh emphasised that artists can use their work to draw the attention of local people to important issues in their communities that are often ignored.

Holistic education promotes critical thinking and encourages students to ask questions and investigate things on their own, rather than teachers transferring answers to them (Miller 2000). Arnalds mentions that her students investigate questions by experimenting with materials

found in their surroundings to find answers. This activity encourages socialisation and critical thinking among students, as emphasised by Kozak and Elliot (2014).

Miller (2000) emphasised that holistic education acknowledges the differences in character and interests of students and helps connect learning to these differences and hidden knowledge known to them (Miller 2000). For instance, Thoroddsen noted that he breaks down complex activities into simple ones so that all students can participate and do something; in this way students are put on an equal level and are empowered to make their own things, as emphasised by Kozak and Elliot (2017).

5.4. Ethical issues

Possible biases during the process of sampling, interviewing the participants and interpretation of the data had to be considered, because being an immigrant myself, I could not avoid subjectivity. Indeed, as Lichtman (2010) emphasized, it is impossible for a researcher not to influence aspects of the study because of her values and cultural background; hence a researcher might be influenced by the study or vice versa.

While conducting the survey and interviews, certain code and ethical requirements were followed. For example, during the survey in the schools, the students were requested not to write their names for confidentiality, as suggested by Braun and Clarke (2013). Moreover, a letter was sent to the headmaster of the schools with attached questionnaires to seek permission to survey students from the school.

5.5 My own artistic reflection in the context of critical-place based education

The findings of the research through observations at the museum, national park, festival and interviews with Ghanaian artists and art educators in Iceland have enhanced my understanding of critical place-based education. For instance, I learned from Backfestivalen that art festivals can preserve nature, promote inclusion and connect students to a place. This was demonstrated through promoting inclusion of all in the community, including the marginalised, children and their families, as emphasised by (Asante & Asare 2015). Furthermore, eco-friendly activities promoted at the festival help make viewers re-examine their relationship to nature, as emphasised by Rademaekers and University (2011) in the literature review.

Additionally, observation and interviews at the museum showed me that storytelling, which is also part of Ghanaian culture, can be used to connect students to places and nature, as emphasised by Somerville (2010).

Furthermore, observation and interviews at the national park showed me that visits to protected areas in local places can connect students to nature and inspire them to protect it, as emphasised by Smith and Sobel (2010) in the literature review. For instance, this finding has important implications that teachers in the Ga West Municipality could go on a trip with students to the natural places in the locality, as mentioned in the study area in section 1.4.

Generally, I learned about the importance of critical place-based education from the interviews with the art educators in Iceland. For instance, I learned that linking subjects in a curriculum make students realise the connection between social, economic and environmental issues, as emphasised by (Gruenewald 2003). Therefore, teachers in Ghana could combine arts with

environmental topics to make it more interesting and fun, as emphasised by Mantere (1998) in the literature review in section 2.

Additionally, I learned that involving students in investigating real issues about their lives and communities make learning relevant to them, as emphasised by the Center for Place-based Learning and Community Engagement (2015). Moreover, I learnt that children learn by doing and hence that the arts can be used in learning because they involve physical activities, inquiry and can help reveal the secret knowledge that is personal to a student, as emphasised by Jónsdóttir (2017).

I learned from the Ghanaian artists that it is important to integrate the cultural aspects of Ghana into environmental art festivals. This can result in improvement of the conditions of a place, thus making people develop a good sense for it, as emphasised by Duxbury and Gillette (2007). Moreover, I learned that it is important to give room for viewers to contribute in art work. This approach results in lasting memories for viewers and ensures that their own needs are considered, as emphasised by Asante & Asare (2015). I find this recommendation helpful in my work as an artist.

My role as an artist and researcher in this study was inspired by philosophers of education like Freire, Kozak and Elliot. Therefore, I asked myself what is happening in my country, what can I do as an individual about the situation.

Through my own experiences as a school child, my teachers never sent our class outside the classroom to study about nature or our local community. When we went out of the classroom with our teachers, it was for sports or sweeping the compound. Most of the things I studied about nature were from books that sometimes were about a foreign country.

Those unfortunate incidences that I have encountered personally have made me understand the need for critical place-based education.

Moreover, I was inspired by Inwood (2007), who advocates collaboration between artists, educators and students while giving room for contributions from students and teachers. To ensure that the research finding reaches different and higher audiences I have put the results in the form of a song which is available on YouTube.

6. CONCLUSIONS

In this study, I have investigated whether the arts have a potential in promoting environmentally literate students in Ghana.

When I started to plan my research, I thought that students that participated in the survey could not connect what they learnt in class to their real life experiences. It surprised me how the study revealed otherwise.

There are so many factors that I have kept in mind from this study, for instance, when art is combined with environmental topics it makes issues interesting for students and helps them develop a sense of love for nature. This is because the arts interact with the senses and the emotions of learners, and hence they can express their feelings and thoughts.

Additionally, eco arts promote a holistic education because they include physical activities that connect learners to nature and real situations in the local places. Besides, art motivates students to reveal the secret knowledge personal to them to solve problems.

The signs of the open mindedness of students and artists from this study serve as a continuous incentive for the EPA of Ghana to pilot environmental art education in the Ga West Municipality schools. Furthermore, the EPA could contribute their rich experience and expertise in environmental education to the project.

The only concern that I have with putting more effort on a creative approach in environmental education is the lack of funding. In view of this, the research suggests that policymakers such as the EPA of Ghana, Ministry of Education, and Metropolitan Municipal Assemblies ought to invest in environmental art education in Ghana

Furthermore, it is important not to forget the teachers, because they play a vital role in nurturing good values in students to become active participants in sustainability. Nevertheless, it is important to note that for the teachers to ensure this change, they must become learners themselves and be flexible and open to innovative ways of learning. Additionally, further studies could take into account the opinions of teachers and the challenges they face so that they can feel part of the process.

The study has led me to conclude that a holistic environmental art education can be achieved through an integrated approach of connecting environmental topics across subjects and connecting learning to the real-life experience of students; thus, art can play a role in closing the gap.

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APPENDICES

Appendix 1: Survey questions for students in Amasaman in the Ga West Municipality.

<p>1. Do you learn about nature in school? (Mark the suitable option (√))</p>	<p>Never ()</p>	<p>Few times Once a term ()</p>	<p>Sometimes At least once a month ()</p>	<p>Many times More than once a week ()</p>
<p>• In which subject?</p>		<p>Mark your answer. () Social studies () Religious and Moral Education () Mathematics () English Language () Physical education () Creative arts () General Science () After school programme/Extra curriculum</p>		
<p>2. Do you learn about nature outside of school? Mark the suitable option (√)</p>	<p>Never ()</p>	<p>Few times Once a term ()</p>	<p>Sometimes At least once a month ()</p>	<p>Many times More than once a week ()</p>
<p>From? Mark your answers</p>		<p>() mother () father () grandmother () grandfather () siblings () other relatives () friends () church () clubs () stories () TV () newspapers () internet () music () radio</p>		
<p>How often do you go out of the classroom with your teacher to learn? Mark the suitable option (√)</p>	<p>Never ()</p>	<p>Few times Once a term ()</p>	<p>Sometimes At least once a month ()</p>	<p>Many times More than once a week ()</p>
<p>When I go out of the classroom with the teacher I learn about: Mark the suitable options (√)</p>			<p>() Natural sciences () Math () History () Geography</p>	

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			<input type="checkbox"/> Sport <input type="checkbox"/> Culture <input type="checkbox"/> Social studies <input type="checkbox"/> Community <input type="checkbox"/> Art	
Can you connect the things you learn from the school books to your life at home? Mark the suitable option (√)	Never ()	Few times ()	Sometimes ()	Many times ()
Can you use the things you learn in school to solve things outside of school? Mark the suitable option (√)	Never ()	Few times ()	Sometimes ()	Many times ()
When I learn about nature in school, it is from Mark the suitable options (√)	<input type="checkbox"/> books <input type="checkbox"/> art <input type="checkbox"/> pictures <input type="checkbox"/> video <input type="checkbox"/> the blackboard			
Do you ever use art to reflect on other subjects? Mark the suitable option (√)	Never ()	Few times ()	Sometimes ()	Many times ()
When I am learning I feel best when I am: Mark the suitable options (√)	<input type="checkbox"/> sitting down at a desk <input type="checkbox"/> sitting on the floor <input type="checkbox"/> in silence <input type="checkbox"/> outside <input type="checkbox"/> with a friend <input type="checkbox"/> when I can connect to my life <input type="checkbox"/> learning about real things in Ghana <input type="checkbox"/> when I am solving problems			
I think it is important to protect nature	<input type="checkbox"/> Agree <input type="checkbox"/> strongly agree <input type="checkbox"/> disagree; <input type="checkbox"/> strongly disagree			
I am capable of doing things to protect nature	<input type="checkbox"/> Agree <input type="checkbox"/> strongly agree <input type="checkbox"/> disagree; <input type="checkbox"/> strongly disagree			
How I treat nature will have an effect on my children and grandchildren in the future?	<input type="checkbox"/> Agree <input type="checkbox"/> strongly agree <input type="checkbox"/> disagree; <input type="checkbox"/> strongly disagree			
Everyone should be able to grow their own food crops?	<input type="checkbox"/> Agree <input type="checkbox"/> strongly agree <input type="checkbox"/> disagree; <input type="checkbox"/> strongly disagree			

Appendix 2: Interview questions for art educators in Iceland

I am planning a programme in Ghana where I will educate students about environmental issues through art.

1. I am very interested in your programme and your methods. Could you please tell me about your approaches?
2. Where do you think students learn best?
3. Why?
4. Have you used art to teach students about the environment?
5. How?
6. How do you use art to create knowledge?
7. Do you think it is important for students to choose their own approach in learning?
8. If I were to start a new programme using art as a medium what would be your advice?

Appendix 3: Interview questions for Ghanaian artists

I am currently in Iceland studying land restoration at the United Nations University Land Restoration Programme. I am doing a research on how the arts can be used as a medium to connect students to their local community, culture and help them develop a love for nature so that they are empowered to protect the environment.

Since I came here, I have discovered some artists in Iceland who work with children by using their art to raise awareness about environmental issues.

1. How do you think you could use your arts to raise such awareness?

2. Have you ever been inspired by any art related to nature protection? If yes, what were they?

3. If I would create an art festival to create awareness to protect the environment, how could you contribute?

4. Can you think of any traditional artefacts or cultural heritage that can be part of such a festival?

5. What is your view on arts where the viewers can participate?

6. What are the responsibilities of an artist towards the community?

Appendix 4: Colour coding for themes mentioned by respondents

Below are the colour codes that shows the learning methods of Kozak and Elliot (2014) examined in the interviews with respondents.

- Integrated learning
- Green- Learning locally
- Blue: real world connection
- Purple: alternative perspective
- Brown: Acting on learning
- Pink: inquiry
- Light brown: Shared responsibility

Example from colour coded text

<p>different tool. Always on day 3 or 4 the kid is saying I have done a lot of music and learned a lot about science</p> <p>When we were developing this programme, we were thinking that, maybe something else comes or people use topics like Maths and knitting or Maths and painting</p>	<p>material it creates easily images containing environmental questions</p> <p>I have also been trying to teach my children to observe nature and to feel it.</p> <p>Together we are finding out about our surroundings. They are also teaching me a lot</p> <p>He just has to be open and observing to what he is doing and to create a condition</p>	<p>the school compound or use in their day to day life.</p> <p>The students learned from Andy's work and created sculptors out of snow</p> <p>I sometime take an art work and tell the students to write a poem about it.</p> <p>We go on visit to the museums, where the kids see arts exhibitions</p>	<p>sign from the nature, wildlife, birds animals, all these things make a lot of interest to people, and you feel happy with more knowledge of the local things when you are learning about it but I dont know</p> <p>. Yes I am sure, stories of the life are the most important thing, because we never know the really truth, science can show us many</p>
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