



Promoting Arts Based Environmental Education for Primary School Pupils in Guyana

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ABSTRACT

This paper presents a Case Study that adopts a mixed method approach that utilizes a questionnaire survey and in-depth interviews that have targeted students and teachers respectively, to assess the status of Arts based environmental education in primary schools in Guyana. The study reveals that Arts-based EE is limited in the current primary school system in Guyana. Moreover, it is confined to Grades 1, 2 and 3 where it is integrated in Drawing, Decorative Craft, Imaginative Composition, Fibre Arts, and Drawing in the Visual Arts options. Importantly, there are no guidelines for implementation; as such the teachers are the sole decision makers in this regard. Consequently, there is no uniformity in approach, and this situation is further exacerbated by the constraint of time, trained teachers, appropriate teaching and learning materials, parents' perception of the Arts, among others. The paper posits, among other things, that teachers must first understand and appreciate the fact that art-based education fosters environmental learning; hence the need for urgent review of the curriculum of Teachers Training Institutions to ensure that Arts-based EE is integrated in its training programme. Additionally, a series of workshops must be designed for teachers who have already completed the Teachers Training Programme.

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BACKGROUND

Environmental Education (EE) is the cornerstone for preparing young children for life through an understanding of the major global environmental problems today, and the provision of skills, values, attitudes and commitment needed to play a meaningful role towards protection the environment with due regard to ethical issues (Belgrade Charter, 1975). The following year, the Tbilisi Declaration was adopted and established three objectives for EE based on the original Belgrade Charter: 1) to foster environmental awareness, 2) to provide opportunities to acquire the knowledge and skills needed to protect and improve the environment; and 3) to promote positive attitudes and behaviors towards the environment (North American Environmental Education Association, 2004; United Nations Educational, Scientific and Cultural Organisation, 1977). Importantly, at a very young age, children need not only to acquire knowledge of the environment and its associated problems, but more importantly, to develop greater sensitivity to the local and national environment and their role in protecting it. Arts based education is considered an effective means of achieving the outcomes of environmental education.

This article discusses the role and potential of arts based education and further promotes arts based environmental education in primary school in Guyana. The key research questions are: (i) What is the status of the use of the arts in EE in primary schools in Guyana? (ii) What are the perceptions of art teachers, as well as pupils, with regards to arts based EE? And finally, (iii) What are the challenges and opportunities for promoting arts based EE in primary schools in Guyana? The study also provides lessons learnt and recommendations for enhancement of the use of the art forms for EE at the primary education level in Guyana, and if applicable, in other parts of the world.

ARTS BASED ENVIRONMENTAL EDUCATION

The Oxford Dictionary defines Art is as the expression or application of human creative skill and imagination, typically in a visual form such as painting or sculpture, producing works to be appreciated primarily for their beauty or emotional power. The Arts refer to the various branches of creative activity, such as painting, music, literature, and dance (collectively referred to as '*the visual arts*') are considered as means through which imagination, creativity and innovation find expression ((Brenner, 2010). Inwood (2013, p. 130) contends that "Art education offers a dynamic way to increase the power and relevancy of environmental education by providing an alternative means of furthering learners' ecological literacy, and calls for more arts-based, affective approaches to environmental education as advocated by other researchers (Lindholdt, 1999; Gurevitz, 2000; McKibben, 2005; Gradle, 2007; Palmer, 1998; and Graham, 2007). By using the terms 'arts education, the authors are referring to music, dance, drama and the visual art.

There are several reasons why the Arts are important in education (Lynch, 2012). Chief among these are (i) Creativity: opportunity to express oneself; (ii) Improvement of overall academic performance; (iii) Development of motor skills; (iv) Visual learning: teaches children how to interpret, criticize, and use visual information and how to make choices based on it; (v) Enhancement of problem solving and critical thinking skills; and (vi) Collaboration and shared



responsibility. Evidence of the cognitive skills development through the Arts as shown by Burton (1999) whose standardised tests of creativity revealed more highly developed creativity in pupils who were integrally involved in arts-based reform. Further, Burton noted that the performance of pupils in high-arts groups surpassed those in low-arts groups on measures of creativity, and therefore (he) argued that creativity creates capacity for learning that can be developed through an arts-based curriculum (Burton, 1999); for example, a visual arts curriculum provides opportunities to pupils to explore, express and experiment with ideas and to investigate possibilities of a range of materials and processes, through drawing, paint and colour, print, clay, construction, fabric and fibre. Undoubtedly, arts-based education provides pupils with abilities and skills required to face the challenge of twenty first century demands (McCullough, 2015).

Further, in an era when children are so preoccupied with the technological developments and seem to be so dis-connected from nature, the Arts also provide opportunities for children to connect and re-connect to nature (Oliver, 1990; Flowers, 2008; Wason-Ellam, 2010), as well as for non-cognitive means of interpreting and adding meanings to their experiences in the world. In fact, when pupils are involved in art activities, they have a tendency to reach the sensory, perceptual, emotional, cognitive, symbolic and creative levels of human beings (Boeckel, 2009, p.2). This reminds one of Khan and Ali's argument that:

Today's pupils are inundated with data but are starving for meaningful learning.....Pupils need to be thinkers, possess people skills, be problem-solvers, demonstrate creativity, and work as a member of a team. We need to offer more in-depth learning about the things that matter the most: order, integrity, thinking skills, a sense of wonder, truth, flexibility, fairness, dignity, contribution, justice, creativity and cooperation. The arts provide all of these.

(Khan & Ali, 2016)

Those reflective skills that are listed above are vital in today's world that is face with unprecedented levels of environmental degradation and natural resources depletion-an ecological crisis that has resulted from unsustainable lifestyles, ecological ignorance, unsustainable consumption and production, and a lack of an environmental ethic that is manifested in widespread anthropogenic environmental abuse (Carr, 2004). Children must be empowered through arts-education to develop a concern for, a caring attitude and a sense of individual responsibility for their immediate environments (Curtis, Reid, & Ballard. 2012); thus, by acting local, be able to contribute to a more global movement to help save planet earth. After all, there is only One Earth. We must care. Such a perspective is critical since as early as 1980 the World Conservation Strategy noted that the behaviour of entire societies towards the biosphere must be transformed if the conservation objective is to be assured and that the long term task of EE is to foster attitudes and behaviour consistent with a new ethic (IUCN, 1980). Moreover, Chapter 36 of Agenda 21 notes:



Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues.Both formal and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making (UNESCO, 1992, p. 320).

Both earlier positions are supported by (Hicks & King, 2007, p.3) who noted that the arts can contribute to *the task of re-interpreting our relationship to the natural world, and that art education is well situated to address environmental problems that emerge at the point of contact between nature and social life*. The authors further argue *that art education must elicit an awareness of environmental degradation from within the particular environmental contexts of the communities it serves*. It is further strengthened by Jacobson, McDuff & Monroe (2007) who observed that music should play a role in conservation education given its capacity to attract attention and appeal to emotions, and draw our attention to cultures in which songs are a traditional way to pass on stories to build awareness about a variety of environmental problems, for example, in Tripoli, Lebanon where a campaign using a catchy jingle was used to improve the disposal of solid waste.

One can argue therefore that as a form of EE, the Arts help to promote and develop a sense of personal responsibility and stewardship in pupils (Palmer & Neal, 1994, Reid & Ballard, 2012). This is hardly surprising given that people, including young children, will adopt the ethic for sustainable living when they are enabled to obtain the required skills and knowledge; hence the need for that *new approach that is vital to build understanding of human relations with the natural world into formal education* (IUCN, UNEP & WWF, 1991, p.52). While Levinthal (1988) asserts that art, when combined with EE, has nearly unparalleled capacity to promote environmental stewardship, it can be argued that EE should be promoted through the arts.

The laudable outcomes of arts-based education can only be assured if teacher are trained in the pedagogical methods to deliver the lessons at the local level, and clearly demonstrate strong self-efficacy (Lemon and Garvis, 2013). This will help avoid resistance by teachers due to a lack of awareness and understanding of how the arts foster environmental learning (Flowers, 2008).

METHOD

The study employed a mixed methods approach characterised by: 1) content analysis by means of a curriculum audit; 2) two cross-sectional surveys, using questionnaires that were designed and self-administered by 27 primary school teachers (from schools across Guyana) who are currently pursuing a Bachelor of



Education degree at the University of Guyana, and 74 pupils from both a public and a private school from Region 4 in Georgetown, Guyana ; and 3) a few in-depth interviews with key informants who were integrally involved in arts-based education initiatives that were facilitated by the National Centre for Educational Resource Development (NCERD). The study, which was conducted during the period June 2017 and January 2018, therefore benefitted from elements of both qualitative and quantitative approaches associated with different types of data that allowed for a more complete understanding of the research problem (Creswell, 2014) and may be justified from the perspective of data corroboration (triangulation), complementarity, and initiation (Bryman, 2006).

The curriculum audit conducted by the content review of curriculum guides was informative as pupils at the primary level (commencing for the child aged five years and nine months and consists of Grades 1 to 6) pupils are required to study the following subjects: Language Arts, Mathematics, Social Studies, Science, Expressive/Visual Arts, Modern Foreign Language, among others. Special attention was given to the objectives and the contents of each grade level of the specific curriculum guide in order to identify those lessons that relate directly to the biological, physical or social environment.

The cross-sectional surveys were vital to the study as an effective method of assessing the status of arts based EE in primary schools across Guyana. The questionnaire that was designed for the targeted teachers solicited their perspectives on the following: status of arts based EE in schools; whether EE is necessary and the reasons for specific responses given; the extent to which the Arts are used to promote EE; and the current challenges and opportunities in respect of promoting Arts-based EE in primary school curriculum. On the other hand, a Likert Scale questionnaire¹ was designed to assess opinions/attitudes of pupils with regard to art, craft, animals, trees, among other features in the environment Box 1 below provides details². The instrument was self-administered by 33 pupils from 1 public school and 41 from one private school (with guidance from their teachers).

A Likert scale with the following assigned scores on the level of agreement was used to determine the pupils' general perception of Arts-based Environmental Education:

- i. Strongly Agree = 4
- ii. Agree = 3
- iii. Disagree = 2
- iv. Strongly Disagree = 1

The sum of scores for the 15 statements was calculated. Scores ranging from 15 to 30 were identified as negative attitudes towards Arts-based Environmental

¹ The Likert Scale questionnaire, which was made popular in Psychology, consists of a series of statements, inviting the respondents to indicate how strongly they feel on specific issues on a sliding scale that ranges from one extreme to another, such as "strongly agree" to "strongly disagree."

² These questions were informed by the literature review.



Education while Scores ranging from 31 to 60 were identified as positive attitudes towards Arts-based Environmental Education.

The few in-depth interviews which targeted key informants who worked in the NCERD or were affiliated to the Centre as Curriculum Development Subject Experts were specifically asked to share their knowledge and experiences with curriculum development aimed to promote arts-based education in primary school and to outline the way forward for the Centre.

Box 1 Statements for Likert Scale

1. I like to spend time drawing and colouring.
2. I like to draw and colour plants and animals.
3. I like to make arts and crafts.
4. I like to make arts and crafts about nature.
5. I like to learn a lot about plants and animals.
6. Plants and animals are very important to people.
7. Plants and animals are very easily hurt by people
8. I like to learn ways to help protect plants and animals.
9. I want to learn more about ways to help protect plants and animals.
10. People really need plants to survive.
11. People really need animals to survive.
12. I would give a lot of my own money to help plants and animals.
13. I would give a lot of my own time to help plants and animals.
14. People need to take much better care of nature.
15. I like to learn a lot about nature.

THE CONTEXT

Primary education is compulsory in Guyana. A child is required to attend primary school for six years, from age five years and nine months to age 16. Parents are given an option to send their children at a public school or a private school. The six year primary school programme is currently referred to a Grades 1 to 6 and is based on a curriculum designed to impact basic literacy and numeracy skills, as well as prepare students for secondary education. Significant attention has therefore been placed on Integrated Science and Social Studies. The National Development Strategy (2001-2010) identifies several concerns about primary level education in Guyana which have current relevance. These include wide ranging differences in the curriculum offered at various primary schools throughout the system, the need for increased instructional time, and the need for improved provision of instructional materials.



With regard to EE, current initiatives are best described as sporadic and in response to funded projects with different outcomes. There is no policy EE policy or is there an integration of EE in the current education policy. To a large extent, EE is more formally promoted at the Secondary school level as examinations are based on the syllabus set by the Caribbean Examinations Council. It should be noted that as early as 1987 in article published by the journal 'Transition', Bynoe asserted the need for education in Guyana to transcend education about the environment and become basic education for global citizenship. The author added that *"EE must be a compulsory component of the curricula at all levels of the education system, and should not be given peripheral treatment"* (Bynoe, 1987).

FINDINGS

Primary school pupils (Grades 1 to 6) in Guyana are required to take the Visual Arts Options (5 Arts; 5 Crafts) that include Drawing ,Imaginative Composition, Decorative Craft, Graphic Design', Printmaking, Three Dimensional Design, Fibre Arts, Surface Decoration, Ceramics, and Leather Craft. An examination of the curriculum revealed that two of the eight general objectives of the Visual Arts relate directly to the early stages/phases of environmental education in respect of awareness and skills acquisition, as outlined in the Belgrade Charter (1975) and Tbilisi Declaration (1977). The others are expressed as:

1. For enjoyment
2. To promote self expression, creativity
3. To develop enquiry skills
4. To develop manipulative and artistic skills
5. To develop awareness of the environment and beauty in nature
6. To develop the ability to select and organize materials and methods appropriate to the task
7. To demonstrate basic knowledge of principles and elements of design in their work
8. To acknowledge Visual Arts as part of the total school programme through correlation and integration with other subjects

Having an awareness of one's environment and the beauty in nature can help nurture a caring attitude and a sense of personal responsibility for its continued protection pupils; as posited by Palmer & Neal, (1994) and Reid & Ballard (2012), even if this is realized at the local level. Table 1 below suggests that only lessons developed for Grades 1, 2 and 3 pupils have incorporated environmental themes. Further, there is a glaring absence of uniformity in the integration approach to environmental content. Notably, environmental content is explicit in Drawing, Decorative Craft, Imaginative Composition, Fibre Arts, and Drawing in the Visual Arts options. Additionally, Grade 1 pupils have an opportunity to develop an appreciation for biodiversity, particularly animals, through music

Notably, in specific cases, lessons with environmental content offered by the Visual Arts are linked to lessons taught under Integrated Science and Social Studies as can be seen in Table 1. The integration is very strategic as its helps to reinforce concepts and provides the pupils with an opportunity to develop greater understanding and appreciation of the environment, as awareness is clearly



necessary, but not sufficient to promote positive attitudes and behaviors towards the environment.

Regarding the status of Arts-based Education, 27 public school teachers responded to this question and multiple responses were given, which validated the concern about the lack of uniformity of what is taught in primary schools across Guyana. Approximately, 85.2% of the respondents indicated that art related education focuses on drawing and sketching, while 74.1% indicated that drama, poetry and role playing are included.

According to survey data 63.0% of the respondents stated that Arts-based Education consists of colouring, shading and painting, while 40.7% indicated included singing and dancing. About 11.1% of respondents draw attention to 'education in the environment' whereby Arts-based Education was incorporated into school improvement projects such as planting trees and recycling, and Craft and Mashramani³ Competitions.

Table 1 Art Based EE in Primary School

Grade	EE Content
1	<p>Drawing: biodiversity, for example birds. (integrated in Social Studies, Science and Mathematics)</p> <p>Imaginative Composition: Knowledge: Be aware of animals in the environment, colours in the environment e.g. colour of fruits, leaves, flowers, and the rainbow. Content: imagining oneself as a bird or any other animals in the environment and imitating this. (Integrated in Science and Social Studies)</p> <p>Decorative craft: Indigenous materials which can be used Collecting beads, coconut shells, plastic bottles and other materials during field trip to make shake (integrated with Music)</p> <p>Music (Instrumentation) Objective: Identify sounds in their immediate environment, and classify according to pitch. Some of the sounds we listen to are made by cows, birds, wind etc. (Integrated in Language and Science)</p>
2	<p>Fibre Arts: K-Fibre materials-what are they; where do they come from? how fibres can be produced; plant and animal fibres. Pupils learn how to group fibres as plant or animal fibres. Evaluation: discussion on living and non-living things. (Integration in Science).</p> <p>Objective: Pupils will be able to learn how objects in their environment can be recycled into the making of instruments (e.g. making wire and metal corks to make a tambourine)</p>
3	<p>Drawing: Be aware of names of objects in the environment; colour in the environment and in nature (K); powers of observation (A). Drawing and colouring things in the environment (Content).</p> <p>Imaginative Composition: Discussion of objects in the environment, draw, colour the object in the environment. (Integrated in Science and Nature Walk/Field trip).</p>

³ Mashramani is an annual festival that celebrates Guyana becoming a Cooperative Republic in 1970, four years after Independence.



TEACHERS' SURVEY

Data from the teachers' survey also reveal that Arts-based Education is integrated into specific subjects such as Social Studies, Science, Agricultural Science and Reading. This finding corresponds with the response from the NCERD Official who noted that *“In addition to being a time-tabled subject, Art-based education was integrated or taught within other subject areas but not always taught in a specially ordered manner”*.

The key informant from the private school mentioned that that teaching aids were made using play dough for Science class, while maps and statistical data were used for Social Studies class, but that these are very limited as an art form/expression. Rather than using traditional teaching aids, the private school depends more on online videos and documentaries and online tutors with narration to capture interest and aid in retention and concentration. Additionally, students would be given group assignments to remake models.

All 27 teachers thought that environmental education is necessary in primary schools and highlighted several reasons that include the following:

- *Children gain knowledge on being respectful to the environment*
- *It encourages creative thinking*
- *It helps reduce pollution*
- *It reinforces morals of society and teaches survival for a healthier future*
- *It encourages the practice of good or positive habits in sustaining our environment*
- *It helps children to be healthy*
- *It helps children to become environmentally conscious and aware of environmental issues*
- *It helps learners to be responsible for their actions and prepares children to be responsible adults*
- *It teaches appreciation for the value of the environment and its importance for survival*
- *It encourages good habits like keeping environment clean, safe and healthy*
- *Children learn about environmental preservation*
- *It teaches children to care for the environment and the consequences of environmental destruction*

Teachers opined that pupils need to understand the effects and impacts of global warming on the environment, natural disasters, the dangers of deforestation and mining, and be encouraged to adopt and support mitigation strategies in ensuring a clean and green environment. This indicates an awareness of the importance of transcending the exam- oriented type of teaching and learning to provide opportunities for the nurturing of positive attitudes and actions in addressing environmental problems. To this end, all surveyed teachers indicated that Arts are used to a limited extent to promote Environmental Education, as clearly revealed by the curriculum audit. They cited examples such as using recycled materials, using unwanted materials to create designs for plant pots, creating posters on



littering, using drawing to depict healthy and unhealthy environments, creative drawing and painting to beautify the school environment, participating in art competitions and acting. Similarly, the NCERD Official also stated that the Arts are not used to a very large extent and are mainly promoted in posters, poetry and art competitions.

Teachers identified right principal challenges to promoting Arts-based Environmental Education –most of which are related to the curriculum and to pupils'/staff response as outlined below.

Staff

- *Lack of specially trained teachers*

Curriculum

- *Overwhelming academic curriculum limits time for Arts (20-30 minutes per week)*
- *The curriculum does not facilitate Art-based Environmental Education while the emphasis is placed on other academic subjects*
- *Outdated curriculum*

Teaching /Learning Materials

- *Inadequate materials, facilities and/or time*

Parental Influence

- *Parental attitude towards the arts*

Pupils'/ Staff Response

- *Lack of motivation and stigma that Art is not beneficial*
- *Pupils' preference to use electronic devices and web-based search engines rather than Arts-based Environmental Education*
- *Lack of cooperation from staff members and some pupils*

Since challenges can be overcome, teachers and key informants were given an opportunity to identify opportunities. Their responses are captured below:

- *The formation of school clubs, health clubs or eco-clubs for pupils*
- *Conducting training workshops for teachers and ensure private schools are invited to participate*
- *Revise textbooks*
- *Encourage the inclusion of environmental themes in Mashramani and Poetry Competitions*
- *Review and revise the school curriculum accordingly*
- *Science and Social Studies exhibitions as part of curriculum*
- *The Ministry of Education should engage private schools to encourage Art-based Environmental Education using different types of media such as sculptures, fabric, ceramics and drawings.*
- *Include pupils' performance in their report cards*
- *Provide incentives for participating schools*
- *It is noteworthy that a new curriculum is soon to be developed; as such, Art-based Environmental Education could be deliberately included in new curriculum and also included in the continuous training of teachers.*



FINDINGS ON PUPILS' SURVEY

While the curriculum audit and the teachers provided vital information on the status of Arts-based EE in primary schools, it was very useful to assess the perceptions and attitudes of pupils.

Using the Likert Scale as explained under the Methodology Section, it was all private and public school pupils surveyed had positive attitudes towards Arts-based Environmental Education. The mean score was 49.61 with mode and median values of 50 respectively, denoting positive attitudes at those levels as well. The minimum score was 34 while the maximum score was 59. The standard deviation from the mean score is 5.578 and approximately three-quarters of the pupils had a score of 54 or less. Table 2 and Table 3 highlight the results of the pupils' survey pupils.

According to Tables 2 and 3 most of the private school pupils strongly agreed that they like to spend time drawing and colouring while most of public school pupils agreed with this statement. Approximately 48.8% of the pupils from private schools strongly agreed, while 21.2% of the pupils from public schools strongly agreed that they like to spend time drawing and colouring. Also, 31.7% of the pupils who agreed that they like to spend time drawing and colouring were from private schools, whereas 51.5% of the pupils from public schools agreed with this statement.

The majority of private school pupils agreed that they like to draw and colour plants and animals, whereas most of public school pupils strongly agreed with this statement. Approximately 19.5% of the pupils from private schools strongly agreed while 48.5% of the pupils from public schools strongly agreed that they like to draw and colour plants and animals. Furthermore, 51.2% of the pupils agreed that they like to draw and colour plants and animals were from private schools while 24.2% of the pupils from public schools agreed with this statement. It was also observed that 27.3% of public school pupils either disagreed or strongly disagreed that they like to draw and colour plants and animals compared to 29.3% of private school pupils.

With reference to the statement that they like to make arts and crafts, approximately 51.2% of the pupils from private schools strongly agreed, while 27.3% of the pupils from public schools strongly agreed. Additionally, 29.3% of the pupils agreed that they like to make arts and crafts were from private schools while 57.6% of the pupils from public schools agreed with this statement.

At least a third of the pupils survey in both private and public schools strongly agree agreed that they like to make arts and crafts about nature with corresponding percentages of 41.5% and 33.3%, respectively. Also, 46.3% of the pupils agreed that they like to make arts and crafts about nature were from private schools, while 18.2% of the pupils from public schools agreed with this statement. It was also observed that 48.4% of public school pupils either disagreed or strongly disagreed that they like to make arts and crafts about nature compared to 12.2% of private school pupils.



Table 2 School Pupils' Perception and Attitudes regarding Art and Environment (Private Schools)

Statements	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)
1. I like to spend time drawing and colouring.	48.8	31.7	14.6	4.9
2. I like to draw and colour plants and animals.	19.5	51.2	24.4	4.9
3. I like to make arts and crafts.	51.2	29.3	17.1	2.4
4. I like to make arts and crafts about nature.	41.5	46.3	12.2	0.0
5. I like to learn a lot about plants and animals.	70.7	29.3	0.0	0.0
6. Plants and animals are very important to people.	75.6	24.4	0.0	0.0
7. Plants and animals are very easily hurt by people	34.1	26.8	26.8	12.2
8. I like to learn ways to help protect plants and animals.	68.3	26.8	4.9	0.0
9. I want to learn more about ways to help protect plants and animals.	75.6	19.5	2.4	2.4
10. People really need plants to survive.	75.6	24.4	0.0	0.0
11. People really need animals to survive.	39.0	46.3	12.2	2.4
12. I would give a lot of my own money to help plants and animals.	48.8	36.6	9.8	4.9
13. I would give a lot of my own time to help plants and animals.	53.7	41.5	2.4	2.4
14. People need to take much better care of nature.	80.5	17.1	2.4	0.0
15. I like to learn a lot about nature.	70.7	26.8	0.0	2.4



Table 3 School Pupils' Perception and Attitudes regarding Art and Environment
(Public Schools)

Statements	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)
1. I like to spend time drawing and colouring.	21.2	51.5	6.1	21.2
2. I like to draw and colour plants and animals.	48.5	24.2	12.1	15.2
3. I like to make arts and crafts.	27.3	57.6	6.1	9.1
4. I like to make arts and crafts about nature.	33.3	18.2	24.2	24.2
5. I like to learn a lot about plants and animals.	42.4	42.4	6.1	9.1
6. Plants and animals are very important to people.	78.8	21.2	0.0	0.0
7. Plants and animals are very easily hurt by people	27.3	48.5	24.2	0.0
8. I like to learn ways to help protect plants and animals.	45.5	45.5	3.0	6.1
9. I want to learn more about ways to help protect plants and animals.	54.5	27.3	12.1	6.1
10. People really need plants to survive.	33.3	51.5	9.1	6.1
11. People really need animals to survive.	33.3	48.5	9.1	9.1
12. I would give a lot of my own money to help plants and animals.	45.5	36.4	15.2	3.0
13. I would give a lot of my own time to help plants and animals.	39.4	36.4	15.2	9.1
14. People need to take much better care of nature.	57.6	18.2	21.2	3.0
15. I like to learn a lot about nature.	63.6	24.2	9.1	3.0



The survey results reveal a marked difference between the attitudes of the pupils with regard to the statement: I would like to learn a lot about plants and animals: Approximately 70.7% of the pupils from private schools strongly agreed while 42.4% of the pupils from public schools strongly agreed that they like to learn a lot about plants and animals. Moreover, 29.3% of the pupils agreed that they like to learn a lot about plants and animals were from private schools while 42.4% of the pupils from public schools agreed with this statement. It was also observed that only public school pupils disagreed or strongly disagreed that they like to learn a lot about plants and animals.

More than 75% of the surveyed pupils of both the private and public schools strongly agreed that plants and animals are very important to people, while 24.4% of the pupils agreed that plants and animals are very important to people were from private schools while 21.2% of the pupils from public schools agreed with this statement.

The majority of private school pupils strongly agreed that plants and animals are very easily hurt by people while most of public school pupils agreed with this statement. Approximately 34.1% of the pupils from private schools strongly agreed while 27.3% of the pupils from public schools strongly agreed that plants and animals are very easily hurt by people. Also, 26.8% of the pupils agreed that plants and animals are very easily hurt by people were from private schools while 48.5% of the pupils from public schools agreed with this statement. It was also observed that 24.2% of public school pupils disagreed that plants and animals are very easily hurt by people compared to 39.0% of private school pupils that disagreed or strongly disagreed with this statement.

Surveyed pupils from both schools seemed indicated a strong willingness to learn ways to help protect plants and animals while most of public school pupils either strongly agreed or agreed with this statement, as revealed by the percentages: 68.3% of the pupils from private schools strongly agreed while 45.5% of the pupils from public schools strongly agreed that they like to learn ways to help protect plants and animals, while 26.8% and 45% of the pupils of the surveyed public school and private school pupils (respectively) agreed that they like to learn ways to help protect plants and animals.

Approximately 75.6% of the pupils from private schools strongly agreed while 54.5% of the pupils from public schools strongly agreed that they like to learn more about ways to help protect plants and animals. Also, 19.5% of the pupils agreed that they like to learn more about ways to help protect plants and animals were from private schools, while 27.3% of the pupils from public schools agreed with this statement.

Further, with regard to the statement: People really need plants to survive, 75.6% of the pupils from private schools strongly agreed while 33.3% of the pupils from public schools strongly agreed. The results also reveal that 24.4% of the pupils agreed that people really need plants to survive were from private schools while 51.5% of the pupils from public schools agreed with this statement. It is worthy of note that only public school pupils disagreed or strongly disagreed that people really need plants to survive.

The majority of pupils from both private and public schools agreed that people really need animals to survive. Approximately 46.3% of the pupils from private schools agreed while 48.5% of the pupils from public schools agreed that people really need animals to survive. Also, 39.0% of the pupils strongly agreed that



people really need animals to survive were from private schools while 33.3% of the pupils from public schools strongly agreed with this statement.

At least 40% of pupils from each targeted school strongly agreed that they would give a lot of their own money to help plants and animals. Significantly, an additional 36.6% of the pupils agreed that they would give a lot of their own money to help plants and animals were from private schools while 36.4% of the pupils from public schools agreed with this statement.

At least a third of all students surveyed in each of the two schools seem to have a very positive attitude towards helping (caring for) plants and animals. Approximately 53.7% of the pupils from private schools strongly agreed while 39.4% of the pupils from public schools strongly agreed that they would give a lot of their own time to help plants and animals. Also, 41.5% of the pupils agreed that they would give a lot of their own time to help plants and animals were from private schools while 36.4% of the pupils from public schools agreed with this statement.

The majority of pupils from both private and public schools perceived that people need to take much better care of nature. Survey data reveal that approximately 80.5% of the pupils from private schools strongly agreed while 57.6% of the pupils from public schools strongly agreed with the statement. Also, 17.1% of the pupils agreed that people need to take much better care of nature were from private schools while 18.2% of the pupils from public schools agreed with this statement. Significantly, 24.2% of public school pupils disagreed or strongly disagreed that people need to take much better care of nature compared to 2.4% of private school pupils.

At least two-thirds of the surveyed pupils in each of the targeted schools strongly agreed that they like to learn a lot about nature, while 26.8% of the pupils agreed that they like to learn a lot about nature were from private schools while 24.2% of the pupils from public schools agreed with this statement. It was also observed that 12.1% of public school pupils disagreed or strongly disagreed that they like to learn a lot about nature compared to 2.4% of private school pupils that strongly disagreed with this statement.

Chi-Square Tests (at 5% significance level)

Chi-square tests were conducted to determine that whether there is any statistical difference between the public and private schools with regard to students' perceptions and attitudes to the arts and to environmental protection. The brief statements below shed light on the findings.

- There was a significant difference between pupils' liking (desire or fondness) to spend time drawing and the type of school (Likelihood Ratio = 11.230, p-value = 0.011).
- There was a significant difference between pupils' liking (desire or fondness) to draw and colour plants and animals and the type of school (Likelihood Ratio = 11.877, p-value = 0.008).
- There was a significant difference between pupils liking (desire or fondness) to make arts and crafts and the type of school (Likelihood Ratio = 9.653, p-value = 0.022).



- There was a significant difference between pupils liking (desire or fondness) to make arts and crafts about nature and the type of school (Likelihood Ratio = 19.321, p-value = 0.000).
- There was a significant difference between pupils' liking (desire or fondness) to learn a lot about plants and animals and the type of school (Likelihood Ratio = 11.563, p-value = 0.009).
- There was not a significant difference between the pupils' perception of the importance of plants and animals to people and the type of school (Linear-by-Linear Association = 0.103, p-value = 0.748).
- There was not a significant difference between pupils' liking (desire or fondness) to learn ways to help protect plants and animals and the type of school (Likelihood Ratio = 6.856, p-value = 0.077).
- There was no significant difference between pupils' liking (desire or fondness) to learn more about ways to help protect plants and animals and the type of school (Likelihood Ratio = 4.950, p-value = 0.175).
- There was a significant difference between the pupils' perception that people really need plants to survive and the type of school (Likelihood Ratio = 17.822, p-value = 0.000).
- There was no significant difference between pupils' willingness to give a lot of their own time to help plants and animals and the type of school (Likelihood Ratio = 6.298, p-value = 0.098).
- There was a significant difference between pupils' perception that people need to take much better care of nature and the type of school (Likelihood Ratio = 9.475, p-value = 0.024).
- There was no significant difference between pupils' liking (desire or fondness) to learn a lot about nature and the type of school (Likelihood Ratio = 5.054, p-value = 0.168).

T-Test (at 5% significance level)

The t test for Independent samples was applied to the data set to assess whether the means of the Likert Scale scores are significantly different. The mean score for private schools was 51.46 while the mean score for public schools was moderately lower at 47.30. However, both scores denote that there were positive attitudes towards Arts-based Environmental Education by both private and public school pupils. As shown in Table 4 and below, the difference between the mean scores for private and public schools is statistically significant (p-value = 0.001).

Table 4 Group Statistics

	Type of School	N	Mean	Std. Deviation	Std. Error Mean
Score on Attitudes	Private	41	51.46	4.702	.734
	Public	33	47.30	5.785	1.007

CONCLUSIONS



The study has revealed that Arts-based EE is limited in the current primary school system in Guyana. Moreover, it is confined to Grades 1, 2 and 3 where it is integrated in Drawing, Decorative Craft, Imaginative Composition, Fibre Arts, and Drawing in the Visual Arts options. Importantly, there are no guidelines for implementation; as such the teachers are the sole decision makers in this regard. Consequently, there is no uniformity in approach. The current situation is further exacerbated by the constraint of time, trained teachers, appropriate teaching and learning materials, parents' perception of the Arts, among others.

On the other hand, overall, pupils seem to have very positive attitude towards environment and the Arts. This provides an opportunity for the Ministry of Education, through its NCERD, to move ahead swiftly with plans to review and revise the curriculum with a view to mainstreaming Arts based EE. Such a decision is considered very timely, as Guyana finalises its Green State Development Strategy that aims to guide economic and socio-cultural development over the next years. As Chapter 36 of Agenda states, education is indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. Pupils today, who will be our leaders tomorrow, must be empowered with the requisite knowledge, skills, values, and attitudes to make decisions that aid sustainable development. Primary education therefore provides a good starting point for the empowerment process.

The surveyed teachers, as well as the key informants have identified opportunities that currently exist for expanding and improving Arts-based EE. This is a critical interest given that the effectiveness of Arts-based EE demands that teachers must first understand and appreciate art-based education fosters environmental learning. The training of teachers must be considered important and thus, the curriculum of the Cyril Potter Teachers Training College should be reviewed urgently to ensure that Arts-based EE is integrated in its training programme. Additionally, a series of workshops must be designed for teachers who have already completed the Teachers Training Programme. Importantly, teachers from the private schools should be engaged in their training activities.

The above-mentioned recommendations must be supported institutionally; hence the urgent need for a review of the current Education Policy to reflect current global practice to make EE a goal of basic education. A policy will provide guidance as well as a legitimate reason for teachers to promote EE through Arts-based education.

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