

Article

An Attitude of Staff and Students towards Littering in Second-Cycle Schools in Sefwi Wiawso Municipality in the Western North of Ghana

Simon Nipah ¹, Alexander Kingsford Otoo ², Anthony Bordoh ^{3,*}, Isaac Eshun ³

¹ Department of Social Sciences, Wiawso College of Education, Sefwi Wiawso, Ghana

² Department of Social Sciences, Our Lady of Apostles College of Education, Cape Coast, Ghana

³ Department of Social Studies Education, University of Education, Winneba, Ghana

* Correspondence: Anthony Bordoh (bordohlity@yahoo.co.uk)

Abstract: The growing unconcern and poor attitude of some Ghanaians towards environmental protection and sanitation practices has become very endemic in Ghanaian Societies. Littering especially is considered a major environmental problem within the setting of this study. This study employed the mixed-method approach in integrating qualitative and quantitative research data. The study adopted a convergent parallel research design. The population for this study consisted of all teaching staff and students of Sefwi Wiawso Senior High Technical School and St. Joseph Catholic Senior High School in Sefwi Wiawso municipality in the Western North Region of Ghana. Purposive, simple random, and convenient sampling techniques were used to select the schools, teachers and students for the study. A sample size of one hundred and ninety-eight (198) consisting of one hundred eighty-eight (188) students and ten (10) teachers were selected for the study. The two main instruments used for data collection were questionnaires and interview guides. The quantitative data obtained from the questionnaire were coded with numerical values and keyed into the data view of the SPSS version 23. The qualitative data was analysed through content analysis and was further transcribed into themes for analysis with a side-by-side comparison with the quantitative data. The qualitative data gathered and presented, were organised and analysed manually using emerging themes. The study revealed that littering is currently caused by irresponsible behaviour among some staff and students coupled with other factors such as lazy attitudes among people, inadequate waste bins on campus, and more seriously, less sensitization of people on littering in the various senior high schools. The study also indicated that provisions of adequate waste bins at vantage points in the various campuses, awarding prizes to individual students and groups with good waste management practices on campus, implementing rules and regulations on littering, as well as educating, and sensitizing students and staff on littering on campuses formed the possibilities on how schools can shape up staff and student's attitudes towards healthy environment by avoid littering. It is recommended that Students with good waste management practices should be rewarded to encourage others in Senior High Schools. It is also recommended that sustainable waste management practices (collection, transportation, and treatment) should be employed in all the Senior High Schools across the country.

How to cite this paper:

Nipah, S., Otoo, A. K., Bordoh, A., & Eshun, I. (2024). An Attitude of Staff and Students towards Littering in Second-Cycle Schools in Sefwi Wiawso Municipality in the Western North of Ghana. Universal Journal of Social Sciences and Humanities, 4(1), 20–34. Retrieved from <https://www.scipublications.com/journal/index.php/ujssh/article/view/709>

Received: June 24, 2023

Revised: October 16, 2023

Accepted: January 20, 2024

Published: March 23, 2024



Copyright: © 2024 by the authors. Submitted for possible open-access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Keywords: Attitude, Staff, Students, Littering, Sanitation, Environment

1. Introduction

Littering as an environmental issue has emerged as a global environmental problem which is increasingly worsening by the day, especially in many developing countries. Human attitude is said to be the main contributor to this environmental sanitation problem: therefore, if urgent attention is not taken to address this phenomenon, it might pose serious threats to sustaining life on Earth [1]. The relationship of humans to the

environment is reciprocal in that, the environment has a profound influence on humans and at the same time, humans extensively alter the environment to suit their needs and desires. Some of these changes created new hazards [2]. Man's activities in the environment have tended to degrade and make the environment untidy and unfit for human habitation. Unfortunately, littering is one form of pollution which creates not only a visual intrusion but also harmful to the health of both humans and wildlife. All over the world, poor environmental quality is recognized as a major threat to social and economic development and even to human survival [3]. Litter is a visible problem with many sources [4]. According to Keep America Beautiful (KAB), (year) one of the most successful anti-litter organizations, the source of litter can be classified into two major groups; stationary and moving sources, where stationary sources are houses, offices, loading docks and construction and demolition sites while moving sources are uncovered trucks, vehicles and pedestrians [5]. Whether intentional or accidental, littering begins with the individual and the habit has now become so common that it has become an interesting area of research [5]. Given the social, aesthetic and environmental problems that result from litter, several strategies have been devised to deal with the littering problem. They have included increased provision and recruitment of equipment, trucks and labour to collect and dispose of the litter collected. These strategies however have not been successful as they do not follow the right criteria during implementation [6]. The failure of the strategies implies that it is an attitude or behavioural problem. Furthermore, the majority of these programmes are not based on sound principles of human behaviour [5]. The failure also suggests that the strategies require psychological intervention with the public being consulted to make them successful [7]. The attitude of humans towards the environment is still negative as are contrary to the concept of sustainable development goals six and eight which recognizes that economic growth and environmental protection are inextricably linked and that the quality of present and future use rests on meeting basic human needs without destroying the environment on which our life depends [8, 9]. People in developed countries throw away mountains of rubbish. It was estimated that the residents of New York City alone produced enough waste, each year to bury the city's huge central park of less than 13 feet of refuse, and in Britain, it was once estimated that the average family of four discarded six trees worth of paper in a year [10].

In Ghana, littering is a major worry in most localities; with street cleaners (Zoomlion Ghana Limited), asserting that many citizens are yet to consider keeping the cities of Ghana clean as everyone's duty. This situation has led to the review of people's relationship with nature, their attitudes and behaviours towards the environment, the duties and responsibilities assumed by individuals towards nature, and the redefinition of ecological culture and environmental awareness [11]. Many studies conducted in Ghanaian schools on littering and littering management [12]. Education on littering at the country's pre-Tertiary schools would have positive effects on changing students' attitudes and behaviours towards littering. Even though there have been several sensitizations on the negative effects of littering on the environment as well as the student's health, the problem seems to continue unabated. It seems the students are now accustomed to the littering behaviour.

Second-cycle schools, especially those, in the Sefwi Wiawso Municipality have tried over the years to keep pace in trying to ensure environmental sanitation on school campuses to curb littering. These have often been the collaborative efforts of school authorities and the Municipal Assemblies whose supports have largely been the provision of some logistical support towards environmental sanitation programmes on the various campuses.

Ghana Education Service sees the need to inculcate environmental education in pupils and students, and therefore several topics on environmental education in Religious and moral education and environmental studies for Junior High have been in the school curriculum (Ghana Education Service syllabus for Junior High School). For several years.

In the Senior High School Integrated Science syllabus, there is a mutual relationship between environmental education and science education. Some of the environmental topics in the syllabus are diseases in humans (cholera, dysentery, malaria and typhoid), Industrial and Domestic waste, and collection and disposal of waste. Other topics are Public Health and Sanitation, Health Services (personal hygiene and cleanliness of surroundings). Students have also been encouraged to form environmental sanitation clubs in some schools.

Despite all the efforts being made over the years, the lingering question is why is it that littering remains a common phenomenon in school compounds and classrooms of Sefwi Wiawso Municipality. Even though there have been several studies on littering in Ghana, yet there were gaps [13-16]. None of these studies was done in the Western North region of Ghana, let alone the Sefwi Wiawso Municipality; and it appears the issue of littering is getting out of hand. This study, therefore, sought to investigate staff and students' attitudes to littering in selected second-cycle schools in the Sefwi Wiawso Municipality, by using the mixed method approach and the convergent parallel design to examine the reasons that contribute to persistent littering on school campuses in the municipality. The purpose of this study was to examine the attitudes of staff and students towards littering in second-cycle schools in the Sefwi Wiawso Municipality. The study was guided by these research questions – (1) What are the underlying reasons for the littering behaviour among staff and students in the second-cycle school of Sefwi Wiawso Municipality? (2) How can schools shape staff and students' attitudes towards littering?

1.1 Factors affecting littering

1.1.1. Littering as a Problem

Litter has been a major problem in both developed and developing countries worldwide. Studies have shown that in the United States, a significant portion of airborne dust is pulverized by human excreted [17]. In rural areas and small towns in China, there are no disposal facilities and there is therefore indiscriminate disposal of refuse. Uncovered plastic bags are blown away from waste disposal sites and eventually end up hanging on trees [18]. Studies indicated, "litter was a serious environmental problem" [19, 20]

Refuse heaps are found around urban areas in Ghana. Gutters, drains, street pavement, lorry parks, beaches and other public places are buried under an avalanche of all kinds of waste materials, and all sorts of refuse including human excreta parcelled in polythene bags are thrown out of windows or dropped into the street [21]. Former President Kuffuor, the then president of the Republic of Ghana once remarked that: "We cannot litter, we cannot leave our surroundings dirty and call ourselves patriots" [21]. The environment and sanitation policy of the Ministry of Local Government and Rural Development of Ghana has defined the roles and responsibilities of individuals, communities, district assemblies and councils as a way of controlling filth and dirt [21]. Despite this, some senior high school students do not seem to realize their responsibilities to keep the environment clean.

Motivations and factors that influence littering behaviour and proper disposal practices include personal, material, social, and habitual factors [22]. Personal factors suggest that an individual's sense of responsibility or belongingness could influence littering behaviour. In essence, littering is perceived as more acceptable when personal responsibility is diminished [23]. Individuals are more likely to litter if they feel less of a personal responsibility for maintaining their environment and when they feel alienated by their community. Uncertainty about what counts as litter, such as questions about which items, their size, and context, also contributes to causing individuals to litter. Thus, small items may cause minimal impact, in terms of aesthetics, health and safety [24]. Other personal factors contributing to littering include a lack of comprehension regarding the

environmental impact of litter, the desire to dispose of untidy items (referred to as "icky factors") due to discomfort in carrying dirt until locating a waste bin, and a sense of lethargy towards walking to a designated disposal area [25, 26].

Material factors also contribute to understanding why people litter the environment. Existing litter and other indicators of an already littered site increase or decrease the likelihood of further littering [27]. Signs of disorder, such as graffiti on the walls, badly arranged chairs in a classroom, split liquids, overturned furniture or even uncompleted buildings increase the likelihood of littering in such places [28, 29]. People are also less concerned about dropping litter in towns and cities than in the countryside, as they believe that urban areas will be cleaned up overnight [25]. The absence of wastebin can also cause littering. When bins are available and easily accessible, littering is found to be significantly reduced [30].

Again, socio-cultural approaches emphasize the interdependence of social and individual processes in the construction of knowledge [31]. Socio-cultural also involves education, as human generally gain knowledge that will construct their behaviour in the future. Another writer also stated that reality constructs how we see and behave towards life, therefore, education and socio-cultural in this context are constructing how people see reality. If they think that littering is not an immoral action to be done that is how reality is constructed for them. Social factors such as gender differences and socio-economic status can account for littering behaviour and frequency [32]. For example, males have been reported to litter more than females while younger adults have been consistently shown to engage in littering more than older adults [30, 33-35]. Low-income earners litter more than high-income earners while social pressures and disapproval from large group sizes deter individuals from engaging in this anti-social behaviour [35, 36]. Finally, in terms of habitual factors (habits), littering may become an individual's 'default' disposal behaviour sometimes done without a particular intention or thought. An example is teenagers engaged in littering behaviour that was believed to be thoughtless and ingrained in their habits, suggesting that littering behaviour may get to a point where it is viewed as 'normal' [37].

The presence of waste bins is another factor contributing to littering; to not litter, one must throw their Waste to designated waste. The writer emphasised that the availability of adequate waste bins plays a big role in the intervention to stop littering. The waste bin should not only be concerned with its quantity, but also the quality. They have also found that people tend to throw waste in open-top and clean waste bins. Therefore, the presence of adequate waste bins with both quality and quantity might be a strong driver for people to avoid littering [38].

Finally, policy on littering is a factor, in the case of littering policy is needed to prevent and deter people from doing litter. It is crucial to determine the act of litter in society by using policies because they are mandatory for society to follow [39]. For example, in 2016, the Ministry of Environment and Forestry of the Republic of Indonesia issued ministerial circulars regarding waste management to promote pro-environments [40]. However, the implementation of the policy is viewed as inadequate to stop the action because littering still occurs frequently.

1.1.2. Effects of Littering

Littering can pose several problems, which may have environmental consequences among others [41]. An environmental problem, litter can be characterized as a substantial source of contamination and disease outbreaks [42]. Misplaced plastic containers plastic bags, glasses and many other commonly used materials accumulate in the environment, posing several health and environmental hazards. Improper disposal of rubbish has been a major issue in Ghana, and the outbreak of diseases such as cholera, typhoid and fever have been cited as deadly diseases caused by unclean environments [42]. Waste in gutters causes stagnant water and this forms breeding grounds for mosquitoes. Items littered

such as cigarettes, glass, plastic bottles, takeaway food packages and snack wrappers seriously damage the environment, as some are not degradable. The littered items cause the death of plants and animals [43]. Improper waste disposal results in the contamination of surface and groundwater, posing a significant threat to biodiversity and exerting an adverse aesthetic impact [44]. Poor environmental sanitation constitutes a major source of environmental health hazards, accounting for an estimated twenty-five per cent (25%) of the total burden of diseases worldwide. Nearly thirty-five per cent (35%) of ill health problems in Sub-Saharan Africa are caused by environmental hazards [45]. Litter is an important environmental issue, approximately 94% of people identify litter as a major environmental and get, and individuals still litter [46]. People who live in areas where there are high levels of litter are more likely to be less physically active and therefore, more likely to be overweight and obese. This brings with it all the associated health risks, including heart attacks and strokes and this puts more of a strain on local health facilities [47].

Littering costs money, this high cost is what led to an increase in the research of littering behaviour and effective solutions to the littering problem [48]. In the United States, the direct cost of litter cleanup is almost 11 billion dollars annually. In South Africa, beach cleansing to remove litter was approximately R. 3.5 million in 1994-95 [49]. It costs the taxpayers a huge amount of money to keep their communities clean, which implies that money that “the economy is rather spent on cleaning up litter” [47].

Inadequate sanitation, through its impact on health and the environment, has implications for economic development [50]. Taking marine litter for example, Charles Moore a Californian sailor, surfer and volunteer environmentalist, who was said to be on an expedition in 1997 discovered that the Great Pacific, North of the Pacific Subtropical Gyre, has become 90% non-degradable plastic [51]. The Gyre is a converging point for several major sea currents with bio-degradable float scums on the Pacific coasts of South East Asia, North America, Canada and Mexico (Grant, 2009). Among key socio-economic sectors that suffer from marine plastic litter are fisheries, aquaculture, leisure and navigation [52]. Fishing is one of the most important economic activities in Anglo, South Africa and Namibia and it is a major contributor to their economy. Litter and pollution from industries are causing degradation of their coastal habitats there eroding their potential to attract tourists [53]. When an area has a litter problem, its residents do not want to spend time there, community spirit suffers and these people’s wellbeing suffers. It also means that residents worry about other problems related to litter such as economic impacts and anti-social behaviour [47]. There are 46,000 pieces of plastic in every square mile of the sea. This plastic and cigarette litter in the marine environment leads to the death of aquatic animals. Litter is a source of toxic substances which pollute the water e.g. cigarettes have the chemical lead which can leach into the water threatening the well-being of marine life [51].

1.1.3. Littering Prevention Strategies

Antecedent strategies are preventive strategies and measures to prevent the occurrence of undesired behaviour [52]. Writers reviewed 50 studies on three antecedent strategies: environmental design, prompting and cleaning up the prior litter and found that all had both strengths and weaknesses. The environmental design factor focused in different studies on the impact of the availability of trash receptacles, their numbers, their attractive design and their location on reducing littering behaviour, and it was found that all these factors discourage people from litter. Written, oral and visual prompts were found to be the most popular and effective method in reducing littering behaviour. Making the message polite, clear, simple and understandable also had an effect [53]. Cleaning up residential areas reduced littering behaviour because both residents and visitors determined the accepted behaviour of the surrounding environment [53]. A study found that “increasing the number of trash receptacles when implemented alone or along

with publicity campaigns, produced a minimal decrease in litter. However, the decrease in litter was when the active participation of citizens in cleaning up their neighbourhoods was due to the availability of trash receptacles and publicity campaigns whose purpose was to make citizens aware of the importance of keeping the city clean. Therefore, involving community residents in clean-up activities can promote a long-term reduction in litter and increase an individual's motivation to not litter. It is unclear though whether active participation is effective only if employed with other factors or could it be successful on its own" [54]. While there is little research on antecedent strategies for littering, it seems likely that in countries like Ghana that have budget constraints and different priorities, it is difficult to provide numerous trash receptacles in some places or increase their numbers in places where trash receptacles already exist.

As for the consequence strategies, which take effect after the act of littering or non-littering, these are either rewards or punishment (fines) [55]. While most countries have laws against littering, these laws are usually not actively enforced. However, countries that have high fines for littering are very high [55]. Ghana is among those countries that have laws against littering that are not enforced. The law addresses public cleanliness and regulates the collection and disposal of wastes from houses, public places, commercial, and industrial establishments.

1.2. Attitude towards Littering

An attitude denotes as the positive or negative evaluation of performing a certain behaviour, in this case littering [56]. Various beliefs determine this attitude, which can either be positive or negative. People acquire beliefs automatically by relating them to certain items, characteristics and or occasions. People analyse the benefits and costs of doing particular behaviours and they therefore tend to form attitudes that may lead to desirable or undesirable consequences [57]. Thus, in advancing the argument, other researchers assert that the adoption of sustainable behaviour is preceded by a positive attitude [58]. To this end, positive attitudes towards behaviour become the starting point for achieving a behavioural outcome. Environmental attitudes are in a way perceived as how to be in proper relationships about one's environment, [59]. Attitude is perceived as an individual meaningful way to a specific situation to serve as the basis for evaluating a reaction in that situation" [60].

Typically, when we refer to an individual's attitudes, we are trying to explain his or her behaviour. Attitudes are a complex combination of things we tend to call personality, beliefs, values, behaviours, and motivations. Attitude towards littering is an individual's psychological tendency to evaluate or respond with a certain degree of favouritism or dis-favouritism towards the throwing of waste on bare ground. Attitude is cognitive, affective, and normative [61]. Other findings proposed that littering behaviour is influenced by an individual's emotions, intellectual, knowledge, actions, value and association with others, including the surroundings [62]. Individuals with pro-environment attitudes are altruistic [63]. Meanwhile, littering is normally connected with littering behaviour and awareness [64]. Littering behaviour relates personality characteristics and responsible environment behaviour. This implies that individuals who possess certain desirable personality characteristics and who have an unfavourable attitude towards littering have more tendencies to be engaged in pro-environmental behaviour [65]. The negative behaviour towards littering can be linked to a decrease in family and community health, bad odour, proliferation of flies, cockroaches, rats and other small and dangerous insects which breed ailments and endanger human health [61].

The Environmental Protection Agency commissioned a study of attitudes towards littering, and the results suggested five mindsets regarding attitudes and behaviour towards littering. Some people are willfully arrogant and anti-establishment types of litterers. These litterers are aware that littering is anti-social, but they have no desire or capacity to change because of peer pressure and broader social problems [66]. Some

people litter as a matter of convenience or through ignorance. A person may litter as a willful arrogant while with a peer group, but litter as inconvenient in a different social setting. The same person can behave differently depending on the situation [66]. A review of related literature identifies the following reasons for littering; laziness, a feeling that someone else is paid to clean up the litter and a perception that litter is not an important environmental concern [67]. Littering is a very important environmental issue and it is never acceptable to litter [68]. A writer revealed that “Students and the unemployed had higher than average rates of littering” [66].

People may litter when unobserved, but not when in public. People of all social backgrounds litter. Students and the unemployed had higher-than-average rates of littering [66]. Writers observed that scarcity of litter bins leads to littering in primary school children [69]. Lack of bins is not a major factor in littering, because most littering occurs within a 5-meter radius of a bin [66]. A study found that “the attitudes of secondary school students to the environment tended to be positive” [70]. A study of high school students showed that the gender of students affects the formation of positive attitudes about the environment [71].

2. Materials and Methods

This study employed the mixed-method approach in integrating qualitative and quantitative research data. The study adopted a convergent parallel research design. This entails that a researcher concurrently conducts the quantitative and qualitative elements in the same phase of the research process, weighs the methods equally, analyses the two components independently and interprets the results together. With the purpose of corroboration and validation, the researcher aims to triangulate the methods by directly comparing the quantitative statistical results and qualitative findings [72]. The population for this study consisted of all teaching staff and students of Sefwi Wiawso Senior High Technical School and St. Joseph Catholic Senior High School. Sefwi Wiawso Senior High Technical School has a population of Nine Hundred and Seventeen (917) and Forty- Five (45) teachers.

Purposive, simple random and convenient sampling techniques were used to select the schools, teachers and students for the study. A sample size of one hundred and ninety-eight (198) consisting of one hundred eighty-eight (188) students and ten (10) teachers were selected for the study. Purposive sampling was used in selecting the target school for the study. There are four second-cycle schools in the Sefwi Wiawso Municipality, all the schools have boarding facilities. Sefwi Wiawso Senior High School and the Senior High Technical are located in the southern part whereas St. Joseph Senior High School and Asawinso Senior High School are located in the northern part of the Sefwi Wiawso Municipality. Using purposive sampling, the researcher intentionally selected Sefwi Wiawso Senior High Technical School and St. Joseph Senior High School which means one school from the north and one school from the south. Another reason is that all are public senior high schools and therefore have similar characteristics, so information from any of the schools can be generalized. Simple random sampling was adopted in selecting the students for the study. The teaching staff was selected using convenience sampling. This was a result of the outbreak of the covid-19 pandemic, only teachers who had periods were present in school. The researcher interviewed the teachers who were available one after the other until the required number was obtained.

The two main instruments used for data collection were questionnaires and interview guides. The questionnaire was used to collect data from students whereas the interview guide was used to solicit data from the teaching staff members selected. The quantitative data obtained from the questionnaire were coded with numerical values and keyed into the data view of the SPSS version 23. The qualitative data was analysed through content analysis and transcribed into themes comparison with the quantitative

data. The qualitative data gathered and presented, were organised and analysed manually using emerging themes.

3. Results and Discussion

3.1. Factors that contribute to littering among teachers and students

This section presents results and discussion on Factors that contribute to littering among teachers and students.

3.1.1. Factors that contribute to littering among teachers

The researchers wanted to find out from the teachers the factors that contribute to littering among the teaching staff. It was alluded that *“the absence of waste bins on campus and laziness on the part of some teachers and students were found to be a major factor. Some teachers also exhibited a good littering culture because they are often sensitized to littering”*. A teacher from St. Joseph had this to say concerning contributory factors of littering: *“Inadequate waste bins, laziness among students, teaching and non-teaching staff”*

3.1.2. Factors that contribute to littering behaviour among students

Table 1. Analysis of factors that contribute to littering behaviour among students

Statements	Mean	SD
Littering is a result of one's attitude on campus.	5.28	6.72
I drop pieces of paper unconsciously.	4.57	5.60
I drop litter anywhere because no one will punish me.	4.45	4.69
I do not feel bad throwing litter at any place where some refuse exists already.	4.38	3.87
Wastes are dirt, so I drop them so that I do not have to keep them on me.	4.34	2.81
I drop litter anywhere because I think it is fun.	4.17	1.10
I drop litter anywhere because I do not care	4.15	1.01
In most cases, littering in school is either accidental or intentional.	3.45	1.30
Students do litter around because of laziness.	3.34	1.10
I drop litter anywhere because I cannot find a waste bin.	3.09	0.95
Grand Total	4.12	2.91

Table 1 above seeks to analyse factors that contribute to littering behaviour among students. Littering is a result of one's attitude on campus was ranked first with (SD: 5.286, M: 6.729). I dropped pieces of paper unconsciously and was ranked second with (SD: 4.571, M: 5.603). I dropped litter anywhere because no one would punish me was ranked third with (SD: 4.457, M: 4.695). While I do not feel bad throwing litter at any place where some refuse exists already was already ranked fourth with (SD: 4.386, and M: 3.873). Waste is dirt, so I drop it so that I do not have to keep it on I was ranked fifth with (SD: 4.342 and M: 2.814). I dropped litter anywhere because I think it is fun and was ranked sixth with (SD: 4.171 and M: 1.103). I drop litter anywhere because I do not care was ranked seventh

(SD: 4.157, M: 1.016). In most cases, littering in school is either accidental or intentional and was ranked eighth with (SD: 3.452, M: 1.304). Students do litter around because of laziness was ranked ninth (SD: 3.345, M: 1.109) and lastly I drop litter anywhere because I cannot find a waste bin was ranked tenth with (SD: 3.098 M.954)

Students strongly agreed that students do litter around because of laziness, this current finding confirms a previous study that “laziness is indeed a contributing factor for littering” [69]. Littering in school is either accidental or intentional, this is in line with a similar study that littering is an individual’s intentional or unintentional act of throwing away waste on the ground as a daily routine [61]. Concerning the statement, I drop litter anywhere because I cannot find a waste bin; the current finding contradicts an earlier scientific study that “lack of waste bins is not a major factor in littering, because most littering occurs within five meters of a bin” [66]. A previous study disagrees and asserts that some students litter anywhere indiscriminately due to the unavailability of bins on vantage points in school compounds [73]. Littering around is a result of one’s attitude on campus. This finding is not surprising since it agrees with a similar study that the attitudes of secondary school students to the environment tended to be positive. “I drop pieces of paper unconsciously”, “I do not feel bad throwing litter anywhere because some refuse exists already.” In addition, students agreed that students drop litter anyway because they do not care [70]. An earlier study asserts that public littering can be reduced by putting in place measures such as bunds, stricter laws and nudging [74]. A writer posits that guidelines for effective environmental education programs that may lead to behavioural change on the part of learners also suggested awareness and sensitization as a measure to reduce littering behaviour [75].

3.2. The possibilities of schools’ ability to shape staff attitudes towards littering

It was realized that some of the measures that can be put in place to change this bad littering culture of the staff are constant and regular sensitization and education on the need to keep the environment clean and exhibit a good littering culture, especially as teachers. The teachers as well as the school authorities have a pivotal role to play in the quest to eradicate littering on the school premises, hence they are to make sure that adequate waste bins are made available on the school premises, educate the students not to litter around, and punish those who will flout the directives. They were also of the view that both staff and students with good waste management behaviour should be rewarded.

Thus, the teachers were in favour of these possibilities to enhance the attitudes of students and staff toward littering on campuses. However, in St. Joseph Senior High School, teachers preferred waste bins to be provided at vantage points on campus to help collect waste a major possibility while in Sefwi Wiawso, teachers preferred incentives to be given to students with good waste management behaviours on campus.

Nevertheless, teachers from both senior high schools least considered educating students on the importance of not littering as a key possibility to enhance the attitude of staff and students toward littering.

Regarding the views of the staff on the factors influencing littering behaviour among staff, it was revealed that inadequate waste bins on the school compound, laziness on the side of some teachers, bad attitudes, ignorance, as well as indiscipline attitudes of some teachers influence their littering behaviour. These were confirmed in an interview with a teacher from Sefwi Wiawso Secondary Technical. He said;

“Mostly, some staff are ignorant about their act of littering while others have poor attitude and mentality that some people or cleaners are paid to do that job so they do not care about their littering. Also, sometimes, some staff feel too lazy to walk a distance to drop even a sachet of rubber after drinking water. Moreover, there are inadequate waste bins on the school compound which makes it difficult for some teachers to walk for a little distance to drop waste than to drop it anywhere closer to them” (one teacher from, Sefwi Wiawso Secondary Technical, 2021).

Furthermore, some staff indicated that they were not sensitized to littering in the school and that goes a long way to affect their behaviour regarding littering. Therefore, there is inadequate education on littering during school hours since even the staff are not well abreast or informed about littering in their various schools.

With the attitude of staff on how to curb littering on campus, it was revealed that most of the respondents said that there should be provision of enough waste bins on the campuses of the school. Also, they indicated that there should be sensitization or more education on littering. Moreover, students and staff should be punished when found as culprits for littering. This is what a teacher had to say:

“There are not enough waste bins on the various campus, even in the staff common room, there is no waste bin. You hardly find a waste bin on the school compound and we find it difficult to drop waste. Therefore, there should be provision of enough waste bins to be placed on vantage points on campuses including staff common rooms. Also, both students and staff who litter around should be punished in one way or the other to deter others from doing the same. Moreover, people need to be educated and sensitised on littering around since it is becoming a behavioural issue on campus” (A teacher from Sefwi Wiawso, Secondary Technical School).

3.3. The possibilities of schools' ability to shape students' attitudes towards littering

Table 2. The possibilities of schools' ability to shape students' attitudes towards littering

Statements	Mean	SD
Putting in place strict litter laws.	4.22	0.46
Incentives must be given to students with good waste management behaviours on campus.	4.24	0.50
Putting up signs is a very creative way of putting a stop to littering.	4.18	0.47
Students should be educated on the importance of not littering.	4.13	0.39
Bins must be provided at vantage points on campus to help collect waste	4.26	0.20
Grand Total	4.20	0.40

Source: Field Survey

The respondents were given some possibilities on schools' ability to shape students' attitudes towards littering. They were allowed to rate the statements stipulated using SD= Strongly Disagree, D= Disagree, U Undecided, and SA = Strongly Agree. The results of these data are presented in Table 2. Table 2 shows that all the interventions or possibilities were highly or strongly endorsed by the students as appropriate ways to shape staff and students' attitudes towards littering. It shows that students strongly agreed that bins must be provided at vantage points on school compounds to help collect waste (M=4.26), incentives must be given to students with good waste management behaviours on school compounds (M=4.25), putting in place strict litter laws (M=4.22) as well as putting up signs is a very creative way of putting a stop to littering (M=4.18). Thus, all the senior high school students were in favour of these possibilities to enhance the attitudes of students and staff toward littering on campuses.

However, in St. Joseph Senior High School, students preferred bins to be provided at vantage points on campus to help collect waste as a major possibility while in Sefwi Wiawso, students preferred incentives to be given to students with good waste management behaviours on campus.

Nevertheless, students from both senior high schools least considered educating students on the importance of not littering as a key possibility to enhance the attitude of staff and students toward littering.

3.4. Possibilities of schools' ability to shape up students Attitudes towards Littering

Students strongly agreed that bins must be provided at vantage points on campus to help collect waste, this confirms an earlier study that students litter anywhere due to the unavailability of waste bins on school compounds and public places [16]. It however contradicts a similar study that "the lack of dust bins is not a major factor in littering" [76]. Incentives must be given to students with good waste management behaviours on campus; this is not different from an earlier study that "there is the need to rightly reward individuals who demonstrate good litter disposal habits such as dropping litter in bins". Putting in place strict litter laws, this current finding adds that participants had knowledge of basic conventions about littering but could not make any specific laws in Ghana [78]. The finding suggests that there is a need for education to make individuals aware of laws related to littering and improper disposal of waste disposal and thereby curb the menace and avoid its negative consequences, as well as putting up signs is a very creative way of putting a stop to littering.

In St. Joseph Senior High School, students preferred bins to be provided at vantage points on campus to help collect waste as a major possibility while in Sefwi Wiawso Secondary Technical, students preferred incentives to be given to students with good waste management behaviours on campus. Nevertheless, students from both senior high schools least considered educating students on the importance of not littering as a key possibility to enhance the attitude of staff and students toward littering.

Moreover, students and staff should be punished when found as culprits for littering. When individuals are punished for littering or observe others being punished for littering, they will be less likely to litter or imitate littering behaviours [34]. Equally, according to the Social Learning Theory, for observational learning to be effective, you must be motivated to mimic the modelled activity. The Social Learning Theory again posits that motivation is heavily influenced by reinforcement and punishment. The Theory continues to say that observing others receiving reinforcement or punishment can be just as beneficial as experiencing these stimuli [79].

4. Discussion

It came to bear that littering involves the unconscious acts of depositing materials. This finding supports an earlier study that littering is an individual's intentional or unintentional act of throwing away waste on the ground as a daily routine [61]. It was revealed through the study that teachers who are supposed to be role models also litter. This current finding confirms the Social Learning Theory which says that most human behaviour is acquired through observation and modeling. [80]. Most of the teachers from St. Joseph Senior High School indicated that littering is not preventable in schools as are result of the poor attitude towards littering.

Most of the staff indicated that as a result of inadequate dust bins on the school compound, laziness, bad attitude, ignorance, as well as disciplinary acts of some teachers. Also, most of the staff indicated that there is inadequate and less sensitization on littering in the various senior high schools. This finding is congruent with another study that strategic and tactical measures can help in reducing littering. Strategic measures can be environmental education and the creation of awareness of the dangers of littering and its impacts on society [7]. A previous study in line with the current findings stated that effective environmental education programs that might lead to behavioural change on the part of learners, suggested awareness and sensitization as a measure to reduce littering behaviour.

It was brought to light that most of the staff said that there should be provision of enough waste bins on the campuses of the various senior high schools. Also, they indicated that there should be sensitization or more education on littering. Moreover, students and staff should be punished when found as culprits for littering [75]. This current finding is in line with the Social Learning Theory which posits that motivation is heavily influenced by reinforcement and punishment in that observing others receiving reinforcement or punishment can be just as beneficial as experiencing these stimuli [79]. Equally, a similar study opines that “when individuals are punished for littering or observed others been punished for littering, they will be less likely to litter or imitate littering behaviours” [34]. As part of the findings, teachers suggested rewards for staff and students with good waste management behaviours on campus. This confirms the Social Learning Theory which states that all humans acquire behaviour through reward and imitation [82]. The theory states that reinforcement as a reward consists of pride, happiness and a sense of success. Therefore, as one is rewarded, he sees it as a success and will continue to practice good waste management behaviour.

5. Conclusions and Recommendations

The study revealed that littering is caused due to irresponsible behaviour among staff and students coupled with other factors such as laziness, inadequate waste bins on campus, carelessness of the environment, bad attitude of students and staff and less sensitization on littering on the various senior high schools. The study also indicated that “provisions of adequate waste bins at vantage points in the various campuses, giving incentives to students with behaviours on campus, enacting laws and rules on littering, as well as sensitizing and educating students and staff on littering on campuses formed the possibilities on how schools can shape up staff and student’s attitudes towards littering”. It is recommended that “Students with good waste management practices should be rewarded while students with poor littering attitudes are punished severely to deter others in Senior High Schools”. It is also recommended that “the Senior High Schools should make it a point to hire enough school labourers to ensure the tidying of the school compound all the time”.

Author Contributions: Conceptualization, SN, AKO and AB; methodology SN, AKO and AB; validation SN, AKO and AB; formal analysis, SN, AKO and AB; investigation, SN, AKO and AB; resources, SN, AKO and AB; data curation, SN, AKO and AB; writing—original draft preparation, AB; writing—review and editing, SN AKO and AB; visualization, SN, AKO and AB; supervision SN, AKO and AB, project administration, SN, AKO and AB; All authors have read and agreed to the published version of the manuscript.

Funding: “This research received no external funding”

Data Availability Statement: Data is available on request from the corresponding author.

Acknowledgements: We acknowledge the participants in this study.

Conflicts of Interest: “The authors declare no conflict of interest.” “No funders had any role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results”.

References

- [1] Gore, A. (1993). *Earth in the Balance; Ecology and the Human Spirit*. Boston; Houghton –Mifflin.
- [2] Wilson, D.C. (2007). *Development Drivers for Waste Management and Research*. 25(3), 198-207.
- [3] Acheampong, P.T. (2010). *Environmental sanitation in the Kumasi Metropolitan Area*. An (Msc-thesis) submitted to the Department of Planning, Kwame Nkrumah University of Science and Technology, pp. 1-5 at <http://academia.com>

- [4] Wanjohi, P.N. (2016). *Assessment of attitude and behaviour towards littering among the citizens of Nairobi City*, Unpublished Dissertation, the University of Nairobi.
- [5] Keep America Beautiful, (2007). *KAB's seven primary sources of litter*. <http://www.kab.org/site/>
- [6] Bell R.G. and Russell, C. (2002), Environmental policy for developing countries. *Issues in Science and Technology* 18, (3)
- [7] Nkwocha, E. E., Pat-Mbano, E. C., & Okeoma, I. O. (2012). Sanitation indicators in the rural communities of South-Eastern Nigeria: Additional evidence of policy failure in rural development. *African Research Review*, 6(1), 155-170.
- [8] Gamble, H.B., Downing, R. H., Shortle, J.S. & Epp, D.J. (2012). *Effects of solid waste disposal sites on community development and residential property values*. Report for the Bureau of Solid Waste Management Department of Environmental Resources, Commonwealth of Pennsylvania.
- [9] Eshun, I., Bassaw, T. K. & Bordoh, A. (2014). The attitude of people towards private sector participation in solid waste management in the Komenda-Edina-Eguafo-Abrem (KEEA) Municipality in Ghana. *American Journal of Environmental Engineering and Science*, 1(5), 110-115.
- [10] Awake, (2002). Waste, will it bury us? *Awake*, 83(16), 1-11
- [11] Atasoy, E. (2005). Education for environment: *A study for primary student's Environmental attitude and Environmental knowledge*. Unpublished doctoral dissertation. Bursa: Uludag University, Turkey.
- [12] Jecty, R.; Nuamah, A. C. & Arthur, C (2020); Three innovative ways of dealing with Sanitation problems in basic schools in Assin Central District, Central Region Ghana, *European Journal of Education Studies* volume 6 Issue 11, 2020.
- [13] Boateng, K.S., Agyei-Baffour, P., Boateng, D., Rockson, G.N.K., Mensah, K.A. & Edusei, A. K. (2019). Household Willingness-to-Pay for Improved Solid Waste Management Services in Four Major Metropolitan Cities in Ghana. *Journal of Environmental and Public Health*. 1-9.
- [14] Mensah, M. (2002). *The state of Environmental Sanitation in Accra Metropolitan Area*. Pentecost Press. Accra, Ghana.
- [15] Vivienne, A.D. S. (2014). *The attitude of students and staff of Asamankesse Senior High School toward environmental sanitation*. A Thesis submitted in partial fulfilment of the requirement for the award of Master of Philosophy in the Department of Social Science Education, University Of Education, Winneba, pp.2-55. Accessed at <http://IJEE.com>.
- [16] Aduku, J. M. (2014). *An assessment of the attitude of SHS students towards environmental sanitation in Ghana: A case of some selected SHS, within the Greater Accra Region*. Pp.18-21. of <http://s3.amazons.com>
- [17] Keizer, K., Lindenberg, S., & Steg, L. (2008). *The spreading of disorder*. *Science*, 322, 1681-1685.
- [18] Haihong, L. (2002). Municipal solid waste disposal and problems. *Journal of the Northwest University of Light Industry*. 20(5), 101 - 105.
- [19] Chanda, R. (1999). Correlates and dimensions of environmental quality concern among residents of an African subtropical city. *Journal of Environmental Education* 30, (2), 1-14.
- [20] London, J., Barth, M., & Söbke, H. (2021). Modelling and simulation of source separation in sanitation systems for reducing emissions of antimicrobial resistances. *Water*, 13(23), 3342.
- [21] Green D. (2001). Kuffour's vision for the environment. *Green Dove*, 25. 16
- [22] Zarza-Delgado, M., & Encinas-Oropesa, A. (2016). Exploring environmental behaviour at home among UK women and its importance in developing an appropriate communication strategy for energy saving. *Revista Legado de Arquitectura y Diseño*, (20).
- [23] Campbell, F. (2009). *People who litter*. Wigan, Manchester: Environmental Campaigns.
- [24] Lyndhurst, B. (2013). *Rapid evidence review of littering behaviour and anti-litter policies*. A Brook Lyndhurst Report to Zero Waste Scotland. 1-81. Retrieved from: <https://www.zerowastescotland.org.uk/sites/default/files/Rapid%20Evidence%20Review%20of%20Littering%20Behaviour%20and%20Anti-litter%20Policies.pdf>
- [25] Lewis, A., Turton, P., & Sweetman, T. (2009). Litterbugs: How to deal with the problem of littering. Prepared by policy exchange for the campaigns to protect rural England. Retrieved from <https://www.zerowastescotland.org.uk/sites/default/files/Rapid%20Evidence%20Review%20of%20Littering%20Anti-Litter%20Policies.pdf>
- [26] Square Holes Pty Ltd (2011). *Keep South Australia Beautiful, Litter Disposal Behaviour*. Retrieved from <http://www.kesab.asn.au/wp-content/uploads/social-research-reports/KESAB-Litter-disposal-behaviour>
- [27] Kallgren, C. A., Reno, R. R., & Cialdini, R. B. (2000). *A focus theory of normative conduct*: When norms do and do not affect behaviour. *Personality and Social Psychology Bulletin*, 26(8), 1002-1012.
- [28] Al-Khaldi, Y. M., AlAsmari, B. A., Al-Mosa, K. M., Falqi, T. A., Aldawood, K. M., AlAseeri, K. A. Z., & Asiri, M. Y. (2022). Preparedness of Primary Care Centers for COVID-19 epidemic in Aseer region, KSA. *Journal of Family Medicine and Primary Care*, 11(10), 6303-6309.
- [29] Keizer, K., Lindenberg, S., & Steg, L. (2008). *The spreading of disorder*. *Science*, 322, 1681-1685.
- [30] Schultz, P. W., Bator, L. B., Bruni, C. M., & Tabanico, J. J. (2013). Littering in Context: Personal and Environmental Predictors of Littering Behaviour. *Environment and Behaviour*, 45(1), 35-59. SAGE Publications.
- [31] Kolodko, J. & Read, D. (2018) Using behavioural science to reduce littering: Understanding, addressing, and solving the problem of litter. *Journal of Litter and Environmental Quality*, vol. 2(1), pp. 335-485.

- [32] Preko, A. K. (2017). Analysis of social cognitive model in the context of green marketing: A study of the Ghanaian environment. *Business Perspectives and Research*, 5(1), 86-99.
- [33] Al-Mosa, Y., Parkinson, J., & Rundle-Thiele, S. (2017). *A socioecological examination of observing littering behaviour*. *Journal of Non-profit & Public Sector Marketing*, 29(3), 235-253.
- [34] Asmui, M., Zaki, S. M., Wahid, S. N. S., Mokhtar, N. M., & Harith, S.S. (2017). Association between litterers' profile and littering behaviour: A chi-square approach. *The 3rd ISM International Statistical Conference (ISM-III)*. AIP Conf. Proc. 1842, 030003-1–030003-7; doi: 10.1063/1.4982841
- [35] Bateson, M., Callow, L., Holmes, J.R., Roche, M.L.R., & Nettle, D. (2013). *Do images of 'watching eyes' induce behaviour that is more pro-social or more normative?* A field experiment on littering. *PloS One*, 8(12), e82055.
- [36] Pat-Mbano, E., & Ezirim, O. N. (2015). Capacity building strategy for sustainable environmental sanitation in Imo State, Nigeria. *Journal of Emerging Trends in Economics and Management Sciences*, 6(8), 395-402.
- [37] Alice Ferguson Foundation. (2011). *getting to the source*: Understanding district citizens and community attitudes towards litter and responses to anti-litter messaging and strategies. Non-engineering solutions for trash reduction in the Anacostia watershed. AFF Final Report, 1-124.
- [38] Kolodko, J. & Read, D. (2018) Using behavioural science to reduce littering: Understanding, addressing, and solving the problem of litter. *Journal of Litter and Environmental Quality*, 2(1), 335-485.
- [39] Sellers, B., Fiore, S. & Szalma, J. (2013) Developing a scale of environmental efficacy. *The International Journal of Sustainability Policy and Practice*, vol. 8(4). Pp. 169-194.
- [40] Republic of Indonesia Constitution (2008). Number 18. Regarding Waste Management.
- [41] Henewa. R.A., Raheem, K., & Ameyaw, Y. (2014). Impact of environmental education on sanitation practices in some selected schools in the New Juaben Municipality, Eastern Region of Ghana. *International journal Advanced Biological research*, 4(2), 228-234.
- [42] Ohene-Adjei, K., Kenu, E., Bando, D.A., Addo, P.N., Noora, C. L., Nortey, P., & Afari, E.A. (2017) Epidemiological link of a major cholera outbreak in Greater Accra region of Ghana, 2014. *BMC PublicHealth* 17:801. doi 10.1186/s12889-017-4803-9.
- [43] Torgler B., Garcia-Valinas A., and Macintyre A. (2008). *The justifiability of Littering: An Empirical Investigation*. Basel: Center for Research in Economics, Management and the Arts.
- [44] Graham, B. D. M. (2021). *Development and Evaluation of Models for Hatchery-Mediated Infection of Neonatal Broiler Chicks*. University of Arkansas.
- [45] World Health Organisation (WHO) (2009). *World Malaria Report*: Geneva: WHO.
- [46] Muchemwa, S. (2017). *Don't be a litterbug* | The Herald. [Online] Herald.co.zw.
- [47] Karshima, S. N. (2016). Public health implications of poor municipal waste management in Nigeria.
- [48] Cooley R. R. (2005). The effectiveness of signage in the reduction of litter in backcountry and front country campsites. *Master Thesis University of Manitoba (Canada)*, 113.
- [49] Balance, A., Ryan P. G. & Turpie, J.K. (2000). How much is a clean beach worth? The impact of litter on beach users in the Cape Peninsula, South Africa. *South African Journal of Science* 96, 210-213.
- [50] UNICEF & World Health Organisation (2012). *Progress on drinking water and sanitation update WHO Geneva*.
- [51] UNEP, Secretariat of the based convention on the control of the transboundary movement of hazard on waste and their disposal (2014) *Vital Waste graphic*. UNEP.
- [52] Dwyer, W., Leeming, F., Cobern, M. K., & Mark Jackson, J. (1993). Critical Review of Behavioural Interventions to Preserve the Environment: Research Since 1980. *Environment and Behavior*, 25 (3), 275-321.
- [53] Abdul, S. F., Miswan, A. H. B., A, M., Abdullah, S & Suwaibatul, I. (2012). Litter reduction: A review for the important behavioural antecedent approaches. *Proceedings of 3rd International Conference On Business and Economic Research, Bandung, Indonesia, 12-13 March 2012 Conference Master Resources*. BANDUNG, INDONESIA.
- [54] Roales-Nieto, J. G. (1988). A behavioural community programme for litter control. *Journal of Community Psychology*, 16, 107-118.
- [55] Wever, R., Van Onselen, L., Silvester, S., & Boks, C. (2010). *Influence of packaging design on littering and waste behaviour*. *Packaging Technology and Science*, 23,239-252. doi:10.1002/pts.892
- [56] Ojedokun, O. (2016). Development and psychometric evaluation of the littering prevention behaviour scale. *Ecopsychology*, 8(2), 138-152.
- [57] Gay, V., & Leijdekkers, P. (2015). Bringing health and fitness data together for connected health care: mobile apps as enablers of interoperability. *Journal of medical Internet research*, 17(11), e260.
- [58] Rex, J., Lobo, A., & Leckie, C. (2015). Evaluating the drivers of sustainable behavioural intentions: An application and extension of the theory of planned behaviour. *Journal of Nonprofit Public Sector Marketing*, 27(3), 263-284.
- [59] Watkins, L., & Gnoth, J. (2011). The value orientation approach to understanding culture. *Annals of Tourism Research*, 38(4), 1274-1299.
- [60] Schmidt, W. P. (2014). The elusive effect of water and sanitation on the global burden of disease. *Tropical Medicine & International Health*, 19(5), 522-527.
- [61] Ojedokun, A.O. & Balogun, S.K. (2010). Environmental attitude mediates the relationship between self-concept, Environmental Self-Efficacy and responsible environmental behaviour among residents of high-density areas in the Ibadan metropolis, Nigeria. *Ethiopian Journal of Environmental Studies and Management*, 3(2), 111-119.

- [62] Clark, A, Clemes, H, & Bean, R. (2000). Como desarrollar la autoestima en adolescents (How to develop self- esteem in adolescents), Madrid: *Editorial Debate*. Clean, Up Australia. (2007). <https://www.cleanup.org.au/PDF/au/cua-cigarette-butts-factsheet>.
- [63] Milfont, T. L. (2007). *Psychology of environmental attitudes: a cross-cultural study of their content and structure*. Unpublished doctoral dissertation. University of Auckland, Auckland, New Zealand. <http://researchspace.auckland.ac.nz>.
- [64] Asmui, M., Zaki, S. M., Wahid, S. N. S., Mokhtar, N. M., & Harith, S.S. (2017). Association between litterers' profile and littering behaviour: A chi-square approach. *The 3rd ISM International Statistical Conference (ISM-III)*. AIP Conf. Proc. 1842, 030003-1–030003-7; doi: 10.1063/1.4982841
- [65] Ojedokun A. O. (2011). Attitude towards littering as a mediator of the relationship between personality attributes and responsible environmental behaviour. *Waste Management* 31(12): 2601-2611
- [66] Environmental Protection Agency (2002). Ghana's State of the Environment Report EPA, Accra, Ghana.
- [67] Fares, R. P., Belmeguenai, A., Sanchez, P. E., Kouchi, H. Y., Bodennec, J., Morales, A., ... & Bezin, L. (2013). Standardized environmental enrichment supports enhanced brain plasticity in healthy rats and prevents cognitive impairment in epileptic rats. *PloS one*, 8(1), e53888.
- [68] Gbadagba, M. (2003). Clean environment, a collective responsibility. *Junior Graphic*, (No. 27), p. 14, of March 12-18.
- [69] Bonnet, M. & Williams, J. (1998). Environmental education and primary children's attitudes towards nature and the environment. *Cambridge Journal of Education* 28(2), 159.
- [70] Lucas, A.M. (1981). Science and Environmental Education. *Journal of Environment I Education*, 12(2) 33-37.
- [71] Thrall, D. N. (1996). Random testing: A study of environmental knowledge and attitudes of sci-tech and life science students. *Dissertation Abstract International*, 57(10).
- [72] Cresswell, J.W., & Cresswell, J.D. (2018). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. SAGE Publications.
- [73] Ocansey, A. (2016). *An attitude of JSS3 students in the Cape –Coast Municipality of Ghana towards littering*. Med dissertation. Cape Coast; University of Cape –Coast.
- [74] Oliveira, M. G. D. (2016). *Estudo de fatores de risco, sororreatividade e perfil clínico de pacientes HIV/Aids co-infectados com Toxoplasma gondii em Natal, Rio Grande do Norte* (Master's thesis, Brasil).
- [75] Lotz-Sisitka, H. (2002). Curriculum patterning in environmental education: A review of developments in formal education in South Africa. In E. Janse van Rensburg (Managing ed.), *Environmental education, ethics & action in Southern Africa*: EEASA Monograph. Pretoria: HSRC.
- [76] Colman, A. (2000). Environment. *Youth Studies Australia*, 19(1), 7
- [77] Amankwa-Poku, M. & Ofori, G. (2020). People have been paid to sweep the place- Exploring the antecedents of littering behaviour in Ghana. *Ghana Social Science Journal* 17 (1): 94-105
- [78] LaMorte, W. W. (2019). *The social cognitive theory*. Boston University School of Public Health.
- [79] Bandura, A. (1977). *Self-efficacy: Toward a unifying theory of behavioural change*. *Psychological Review*, 84(2), 191.
- [80] Okeoma, I. O. & Nkwocha E. E. (2009). *Street Littering in Nigeria Towns: Towards a Framework for Sustainable Urban Cleanliness*. *African Research Review*, 3 (5), 147-164.
- [81] Mensah, R. O., Quansah, C., Oteng, B., & Nii Akai Netey, J. (2023). Assessing the effect of information and communication technology usage on high school student's academic performance in a developing country. *Cogent Education*, 10(1), 2188809.
- [82] McRae, J., Smith, C., Emmanuel, A., & Beeke, S. (2020). The experiences of individuals with cervical spinal cord injury and their family during post-injury care in non-specialised and specialised units in the UK. *BMC health services research*, 20, 1-11.