INFLUENCE OF TEACHERS' EDUCATIONAL LEVEL ON THEIR ATTITUDE TOWARDS SOLID WASTE MANAGEMENT IN CALABAR EDUCATION ZONE, CROSS RIVER STATE, NIGERIA

BY

Unoh, Eno Etim
Email: enoetimunoh@gmail.com **+2348035126848**

&
Ajom, Leo Bassey
Email: leoajom3333@gmail.com **+2348063604815**
Department of Environmental Education
Faculty of Arts and Social Science
University of Calabar

Absract
The purpose of this study was to establish the influence of teachers' educational level on their attitude towards solid waste management in Calabar Education Zone of Cross River Sate, Nigeria. To achieve the purpose of this study, one null hypothesis was posed and tested at 0.05 level of significance. The research design adopted for the study is Ex-post facto research design. The population of the study consisted of all the teachers in all the public secondary schools in Calabar Education Zone in Cross River State. The simple random and proportional simple random sampling techniques were used to select the LGAs and public secondary schools used for the study. Through these techniques, three hundred and ninety-seven teachers were drawn from nineteen secondary schools in the area. The instrument used for data collection for the study was a questionnaire tagged: Influence of teachers' educational level on their attitude towards solid waste management questionnaire' (ITEATSWMQ). The questionnaire was divided into two parts: Part A contained information on teachers' educational level, while part B was designed to measure attitude towards solid waste management and had fifteen items. The instrument was validated by the supervisor and two other experts in Educational Measurement and Evaluation. Reliability test was carried out on part B of the instrument using Cronbach alpha reliability test and the result showed a coefficient estimate of .74 to .85 indicating that the reliability of the instrument was very high. Data obtained from the field were coded and tested using one- way analysis of variance (ANOVA). The results obtained revealed that teachers' educational level significantly influence their attitude towards solid waste management. Based on the result it was recommended among others that, there is need for students of Environmental Education who will become teachers in secondary schools to be trained properly to have positive attitude towards solid waste management to inculcate same to their learners.

Keyword: Teacher, Educational level, Attitude, Solid waste, Management

Introduction

From Engineering to Behaviourial Science, solid waste management has become a germane issue among government, researchers, private organizations, environmentalists and the general public (Abimbola, 2012). The rapid urbanization experienced in most cities of the world and particularly in Nigeria has led to a plethora of environmental challenges including poor solid waste management within the different parts of the society. The problem of indiscriminate disposal of solid waste, urban sprawl, decaying inner city, inadequate housing, crime, and congestion, among others are quite alarming in recent times.

Indeed, teachers' attitude in association with their various business activities such as selling of sachet water, biscuits, can drink, sweets, moimoi, sugar cane, groundnut, and other fruits in and outside the school compound may have been responsible for indiscriminate solid waste disposal or poor waste management which has become a common phenomenon in most Nigerian towns and cities in the recent time. Inhabitants in the study area (teachers included) have showed no difference in managing their waste. They tend to dump refuse anywhere in the environment as if it has no implication on their community health and social welfare. The rate at which indiscriminate disposal of solid waste has posed severe environmental and health risks on human population is quite disturbing.

It is also capable of inflicting permanent damage on the ecological system. Considering the magnitude of waste released daily into the environment and, considering the fact that there appears to be no serious effort for the efficient management of these wastes, in spite of their environmental effects on human health, there is need for people to understand the dynamics that are essential for the explanation of the trends and emerging disease epidemics on the human environment associated with poor management of solid waste. This will help to affect human behaviour towards the environment (Ahmed, 2011).

Increased urbanization, lack of environmental sanitation exercises and inadequate environmental awareness has forced community residents to dump solid wastes carelessly or haphazardly anywhere they deem fit. Such controversial tendencies and attributes would be unacceptable, if we desire to live in beautiful and screen environment. Some of the lagoon fronts in the country have been turned into dumps for all sorts of solid waste without thinking of the health and environmental implications. Trucks fully loaded with feaces queue up in large numbers to discharge the contents into the lagoon (Ambe, Unimna, & Onnoghen, 2019, Etefia, 2012).

To ensure a clean and safe environment, the Cross River State Government established Calabar Urban Development Authority (CUDA, 2010) to monitor the environmental quality and to ensure a refuse free environment. However, despite the government efforts at making the environment clean in Calabar Education Zone in Cross River State, Nigeria teachers still display the "I don't care attitude about their environment". Despite the provision of refuse

receptacles by the government, many residents still prefer dumping refuse at places which they consider convenient to them without thinking of the health implications of their action on the environment and human beings. Indiscriminate solid waste disposal affects the quality of water, and air, blockage of drainage, and causes serious environmental hazard which the people seem not to be bothered about.

One of the greatest problems facing the study area in recent time is the problem of indiscriminate solid waste disposal and poor solid waste management particularly in the urban centres like Lagos, Portharcourt, to mention but a few (Akpe, 2016). It is no longer news that the study area which used to be the best in Nigeria in terms of cleanness and neatness has lost that respect and glory which might be due to peoples' attitude towards solid waste management. The indiscriminate solid waste disposal does not only constitute an eye-sore but has posed a serious threat to the health of the people, and of course, threatens the aesthetic nature of the environment (Etefia, 2016). Udowong (2013) reported an increase of 17056 tonnes of solid waste each generated in major cities in Calabar Education Zone of Cross River State. The researcher assumed that the increase in waste generation within Calabar and its environs require adequate mechanisms like waste bins, and disposal trucks to facilitate collection and adequate disposal and management. Unfortunately, the inability of the municipal authority to provide adequate number of waste bins and trucks needed has resulted to indiscriminate disposal of solid waste into gutters, nearby bushes, roadside, streams and anywhere one feels like. The poor attitude to management of solid waste has led to unanticipated health consequences on humans and the environment.

Solid waste generation, disposal and management are increasingly becoming alarming, worrisome and important issues all over the world. Solid waste generation and management among the educated and uneducated people continue to increase at an alarming rate worldwide (Khan, Faisal, & Farooqi, 2011). One of the most controversial planning issues worldwide is the localization of waste disposal and management infrastructure at the local communities where people living within the catchment areas suffer direct effect from the waste management plant (Pol, Di Masso, Castroechini, Bonet, & Vidal, 2016).

Gallagher and Ferreira (2015) found out that factors thought to affect attitude towards local waste disposal facility development include distance, engagement in the planning process and other socio-economic and personal variables. They maintained that, socio-economic and personal variables including age, gender, marital status, family size, educational and income level do significantly influence peoples' attitude towards solid waste management. Unfortunately, teachers who were supposed to lead by example in ensuring proper behaviour towards solid waste disposal may not have any difference in their attitude. It is sometimes sad to see teachers and students of health education discard solid waste such as paper, sachets and cans indiscriminately even within the school environment and along the path. As ambassador

of the environment, their attitude is supposed to be different from people that have not been in school before (Emeh, 2017).

There are reports that wastes that are not properly disposed can cause water pollution, which may breed diseases like cholera, and typhoid (Bartone, 2020; Buckle & Smith, 2020). All these are pointers to the fact that, a proper understanding of disposal and management of solid waste becomes imperative for study in Calabar Education Zone of Cross River State, because indiscriminate disposal of solid wastes is a threat to the environment and human health. Okebukola (2011) states that indiscriminate disposal of solid waste is a major factor in the spread of gastrointestinal and parasitic disease primarily caused by vectors. The author further asserted that diarrhea, cholera and typhoid fever are among the major killer diseases due to improper disposal of solid waste.

Environmental experts are of the view that the implications of this practice are very grave. The failure of relevant agencies to stem the tide of reckless waste dumping and littering of Nigerian cities have resulted in indiscriminate waste disposal along major and minor streets, roads and surrounding bushes are all indication to the fact that there is a clear pattern of non-enforcement or non-implementation of existing environmental sanitation laws. Regrettably, the above condition, that is, indiscriminate disposal of solid waste enhances environmental hazard in any society. It is important to note that endangered public health situation can exert excessive pressure on the environment and public health.

Irregular and unplanned dumping of solid wastes, especially at night, which is often in gross violation of relevant rules and regulations continue to hinder plans, preparations and effective land use delineation which were expected to usher in a beautiful, clean and orderly environment. Consequently, there remains a huge gap between policy formulation, execution and implementation which increase the problem of solid waste management in the study area which necessitate the need to evaluate the problems of solid waste disposal and management in Nigeria. Ethically, the beauty of any environment lies on its good sanitary condition. This is so because, when an environment is clean the lives of citizens are not threatened by illnesses and diseases

Teachers' educational level can influence attitude towards solid waste management in the society. A teachers' educational qualification or level significantly influence has attitude towards solid waste management. This implies that the higher the teachers' educational level, the better their attitude towards solid waste management. For instance, an individual with first school leaving certificate would have a different perception about solid waste management than the person with senior secondary school certificate. Similarly, a teacher with first degree differs in attitude towards solid waste management than teachers with post graduate degree, master and doctor degree respectively.

Statement of the problem

The management of solid waste has been a major challenge facing individual households and agencies responsible for solid waste management in Calabar Education Zone of Cross River State. This is because the volume of solid waste being generated daily by the people resident in the study area has continue to increase at a faster rate than the ability of the waste management agency to meet up with the financial and technical resources needed to parallel evacuation. In both rural and urban areas, streets, residential backyards, waterways, uncompleted buildings, public spaces and undeveloped plots are littered with solid wastes as illegal refuse dumps for many households.

Government on her part has made several efforts to ensure that the collection and management of solid waste in the area is effective and functional. To sustain this feat, agency charged with the responsibility of managing waste has been provided with the financial and manpower resources to the goal of making the state the most clean is realized. Unfortunately, it seems that peoples attitude towards solid waste management is very poor and below expectation. Similarly, due to lack of adequate spatial distribution of designated household refuse collection points that do not support the rapid population growth and variation in neighborhood characteristics, leading to inefficient solid waste management by the Cross River State Environmental Protection Agency (CRSEPA, 2018) in collaboration with the State Ministry of Environment in conjunction with Calabar Urban Development Agency (CUDA).

Currently, solid waste management in the study area has severe problems such as low collection rate and non-collection in some areas, inadequate transportation and storage facilities, improper disposal method, and lack of separation and treatment mechanism in place. The rate of generation of waste is high compared to the low income neighbourhoods which form the center of the traditional setting and semi urban areas of the study area. This is as a result of the high income level of the residents in purchasing more items than the residents of the low income neighborhoods. The collection of waste depends on the income of the owner of the waste to be able to pay the amount charged by the waste management agency. At the low income neighbourhoods, waste management receive no or minimal attention. Disposal of waste is done openly on available spaces or set on fire in a little corner of the low income neighbourhoods backyards. Generally speaking, the current waste management practices have further compounded the existing situation due to peoples' poor attitude of handling waste in the study area.

In Calabar Education Zone of Cross River State, several tonnes of solid waste are left uncollected on the streets each day, blocking the drainage and creating feeding ground for pest and rat, and the public health implications are obvious. The school system that is primary, post primary and tertiary institutions generates significant tones of solid waste ranging of cans, papers, sachets, and leaves arising from business activities most teachers engage in. Recognizing the centrality of behaviour change, and intervention reforms towards addressing

the issue of poor management of solid waste at the federal, state and local levels, as well as being cognizant of the important role private waste disposal operators may play in ensuring effective solid waste management in the area, this study intends to find out to what extent does teachers' educational level influence their attitude towards solid waste management in Calabar Education Zone of Cross River State, Nigeria?

Purpose of the study

The purpose of this study was to examine the influence of teachers' educational level on their attitude towards solid waste management in Calabar Education Zone in Cross River State, Nigeria. Specifically, the study is undertaken to;

i. Investigate the extent to which teachers' educational level influences their attitude towards solid waste management in Calabar Education Zone of Cross River State.

Research question

This research questions was posed as guide to the study;

v. How does teachers' educational level influence their attitude towards solid waste management in Calabar Education Zone of Cross River State?

Statement of hypothesis

To further guide the study, the null hypothesis were formulated

i. Teachers' educational level does not significantly influence their attitude towards solid waste management in Calabar Education Zone of Cross River State.

Literature review

Education has been found to have a correlation with waste generation and management, disposal and recycling using relevant technology to reduce the effect on human and environmental health. Lepose and Mettler (2019) observed that most rural dwellers tend to lack prerequisite knowledge on the generation, collection, management and disposal of waste at home and within the environment they are located. One of the major reasons is the lack of environmental education and other relevant knowledge on solid waste management. Thus the longer period the individual spent in formal school system, the more likely he/she will be willing to be effectively in disposal of solid waste and more experience he/she will have. Level of education also makes people put in extra effort in municipal solid waste management (MSWM) practices such as waste minimization (Khan 2011). The finding of Coertjens (2010) revealed that educational track is one of the important factors in explaining people's environmental attitudes and awareness. In a study carried out to find out the knowledge, attitudes and practices associated with waste disposal in Jos South metropolis in Plateau state, Nigeria. Jatau (2013) discovered that respondents with higher level of education such as B.Ed, HND, M.Ed, and Ph.D possessed adequate level of knowledge of the impact of improper waste disposal on health than those with lower level of education like FSLC, SSCE, and NCE.

Samuel (2016) found out in his research that primary six school pupils possessed awareness of refuse and sewage disposal than the pupils in the lower classes. Most of the respondents in the higher primary school level according to the study of Samuel demonstrated higher level of awareness that pests and vectors can breed diseases when there is stagnant water in the environment, drainage blockage, inappropriate refuse disposals and lack of personal hygiene than those pupils at the lower class levels. Furthermore, the study revealed that most of the pupils in primary six knew the pests and vectors which affect health than the pupils in the lower classes.

According to Jatau (2013) in most cities, the mounds of decomposing rubbish provide breeding grounds for rats, flies, and mosquitoes, contributing to unhealthy environment. The poor waste disposal attitudes and practices may be adduced to poor knowledge of the impact of improper waste disposal on health. He submitted that sufficient awareness of the impact of waste disposal on health may help people to protect themselves from diarrhea, typhoid fever, cholera, hepatitis, malaria and other infections. Adequate awareness of the negative impact of poor refuse disposal may encourage people to adopt positive waste disposal practices may also promote personal hygiene and the health of the environs.

On the assessment of waste disposal practices among residents of Owerri, Adogu, Uwakwe, Egenti, Okwuoha and Nkwocha (2015) discovered that level of education is a strong determining factors. According to Peters (2017) education is necessary in order to create awareness of the causes of problems such as food and water scarcities, pollution, and solid waste disposal/ management, among others. Lengard (2015) asserted that environmental education is very essential to all because it has potential effect of affecting peoples' negative attitude towards the environment. The author noted that through learning an individual is able to transform his environment, and actualize his own potential by a process. To this end, education is the most important weapon of change. Any fundamental change in the intellectual and social outlook of any society has to be preceded by an educational revolution. With knowledge acquired through education an educated individual would feel guilty abusing the environment with careless stupendous solid waste disposal, whereas the illiterate would not be bothered. Anijah-Obi (2015) noted that a key element in human capital oriented strategy for community sound and sustainable solid waste management is education. She states in one of the goals derived from the philosophy that there should be the training of mind in the understanding of the world around.

Emeh (2020) noted that community with people that have sound knowledge for the environment, from the environment and about the environment tend to do better than those communities without environmental literacy. He further emphasized the need for participatory adult education based on productive activities of the adults and on helping them to restructure needs and goals, and in forming policies for the future. According to Obot (2014), Emmanue, & Ambe, (2014) citizens with higher education benefit greatly from the radio, television and

printed education media that increase their knowledge of hazards of the filth in the health. Such information helps them to avoid community degradation helps them to avoid community degradation and pollution, it also help them to reduce the size of their families. Given the high level of illiteracy in the community areas, and granting that poverty precludes many people form benefiting from the radio and television educational programme to guide them on the new technique of proper solid waste disposal, their sense of belonging and commitment to proper community life and solid waste disposal is very poor.

Anijah-Obi (2015) opined that once an individual becomes even averagely educated his behaviours towards the community and solid waste disposal has to change. She sees education as an enhancement and improves access to the higher and better quality of life. This proved that with good educational level there can be effective solid waste disposal and management. She further stresses that education enables people to change their attitude towards indiscriminate solid waste disposal. All these forms the basis for education as a mean of facilitating behavioural change and attitude for good and sustainable solid waste disposal. Since that age, gender to adult and children were observed degrading the environment. Other ways of degrading the environment by the individuals include riverbanks, by the road, cutters bushes around houses and water bodies, which are not environment friendly (Michael 2018).

Urban authority's world over are facing increasing problems in the collection and difficulties of solid waste management (Robert, 2016). In developed countries solid waste problems usually centre on the high costs of disposing the large quantities of waste generated by household and businesses. In contemporary society, education has changed dynamics. The advancement in technology has facilitated quick approach to waste management particularly in developed nations, with the intention that the developing nations would soon adopt. The United States, with only 4.7% of the world's population, produces about 33% of the world's solid waste (Miller, 2013). About 97.5% of this solid waste comes from mining, oil and natural gas production, agriculture and industrial activities used to produce goods and services to consumers. Another 1.5% of solid waste produced is municipal solid waste (MSW) from homes and businesses in or near urban areas. The amount of MSW, currently produced in the United States each year amounts to about 200 million metric tonnes, almost twice as much as in 1970 (Miller, 2013). This is the world's highest per capita solid waste production and many times the rate in developing countries. The solid waste generated is managed in different ways. Examples of waste handling systems due to educational advancement include:

Reuse– is a form of waste reduction that extends resource supplies. It keeps high-quality matter resources from being reduced to low matter-quality waste. Two examples for reuse are refillable glass beverage bottles and refillable soft drink bottles made of polyethylene terephthalate (PET) plastics. Denmark led the way by banning all beverage containers that cannot be reused. In Finland, 95% of the soft drink, beer, wine and spirit containers are

refillable, and in Germany, 73% are refillable (Miller, 2013). Unlike recyclable cans and bottles, refillable beverage bottles create local jobs related to their collection and refilling.

Recycling- is another waste management strategy in developed countries. In 1999, about 28% of United States' municipal solid waste was recycled or composted. The US has more than 8,800 municipal curb side recycling programmes serving 51% of the population. One advantage of recycling and composting is that they are land serving and pollution reducing strategies (Miller, 2013). Studies have shown that one of the best ways to encourage recycling is pay- as- you throw programme that bases garbage collection on the amount of waste a household generates for disposal; materials sorted out for recycling are hauled away free. In Australia, for instance the recycling rate is high and is increasing, with 99 percent of households reporting that they had recycled or reused some of their waste within the year 2002, up from 85 percent in 1992 (Miller, 2013). This suggests that Australians are in favour of reduced or no land filling and the recycling of waste. The advantage of recycling and reuse is that they prevent creation of waste at source and reduce amount of waste thrown into community dustbins or disposal sites.

Incineration has to do with the combustion of waste using a closed mechanism known as incinerator. The invention of the device called incinerator is borne out of advancement in education and research. In the United States, about 16% of the mixed trash in municipal solid waste is combusted in about 170 mass-burn incinerators (Miller, 2013). However, since 1985, there has been a decrease in the use of incineration for treating wastes in some parts of the world because of high costs, health threats from air pollution and intensive citizen opposition. Incineration is carried out both on a small scale by individuals and on a large scale by industry. Incineration is common in countries such as Japan where land is scarcer, as these facilities generally do not require as much land as landfills. Waste-to-energy (WtE) or energy from waste (EfW) is broad terms for facilities that burn waste in a furnace or boiler to generate heat, steam and/or electricity. Incineration is a controversial method of waste disposal, due to such issues as emission of gaseous pollutants. On the other hand this method produces heat that can be used as energy.

Landfill- disposing of waste in a landfill involves burying waste, and this remains a common practice in most countries. In a sanitary landfill, solid wastes are spread out in thin layers, compacted and covered daily with a fresh layer of clay or plastic foam. About 54% by weight of the MSW in the US is buried in sanitary landfills compared to 90% in the UK, 80% in Canada, 15% in Japan, and 12% in Switzerland (Miller, 2013). In Canadian urban centres curb side collection is the most common method of disposal, whereby the city collects waste and/or recyclables and/or organics on a scheduled basis. In rural areas people often dispose of their waste by hauling it to a transfer station. Waste collected is then transported to a regional land fill.

Methodology

The research design adopted for this study is the Ex-post Facto research design. According to Isangedighi, Joshua, Asim and Ekuri (2004), the Ex-post facto research design basically studies phenomena after they have occurred. The research area for this study is Calabar Education Zone of Cross River State, Nigeria. The study area has a total population of 1,988,924 people (Cross River State Population Commission, 2018). It comprises seven local government areas namely: Akamkpa, Akpabuyo, Bakassi, Biase, Calabar Municipality, Calabar South, and Odukpani Local Government Areas. The population of this study consists of all public-school teachers in Calabar Education Zone of Cross River State, Nigeria. Statistics from the State Secondary Education Board revealed that there are three thousand and fourteen (3014) teachers in the seventy- four (74) public secondary schools in the Calabar Education Zone of Cross River State. A multi-stage sampling procedure (simple random and proportional sampling techniques) were adopted to the local government areas, schools and the three hundred and ninety-seven (397) respondents used for this study.

The instrument used for this study is questionnaire. The instrument was tagged: Influence of teachers' educational level on their attitude towards solid waste management questionnaire (ITEATSWMQ). It was designed with a 4-point Likert scale questionnaire and contained fifteen (15) items. The validity of the instrument was ascertained using three lecturers from the department of Environmental Education and one from Measurement and Evaluation. The reliability of the instrument was determined using Cronbach Alpha reliability coefficient that range between 76 to .85; indicating that the instrument is reliable to measure what it was meant for. Data analysis was done using one way analysis of variance (ANOVA).

Results

The null hypothesis states that teachers' educational level does not significantly influence their attitude towards solid waste management in Calabar Education Zoneof Cross River State. To test this hypothesis, the attitude of teachers towards solid waste management was compared across teachers with NCE, first degree/HND, master's degree and PhD using the one-way analysis of variance (ANOVA). The result is presented in Table 1.

Table 1: Summary data and one-way analysis of variance (ANOVA) of the influence of educational level on attitude towards solid waste management

Educational level	N	$\overline{x}$	SD		
NCE	214	58.14	6.70		
First degree/HND	114	61.25	6.07		
Master degree	39	62.74	5.56		
PhD	30	62.50	3.27		
Total	397	59.82	6.47		
Source of variance	SS	df	MS	F	P-value
Between groups	1383.874	3	461.291	11.926*	.000
Within groups	15201.068	393	38.68		
Total	16584.942	396			

*Significance at the 0.05 level of significance

The information in Table 1 shows that level of education of teachers significantly influence their attitude towards solid waste management in Calabar Education Zone of Cross River State (F=11.926; þ=0.000). Hence the null hypothesis that teachers' educational level does not significantly influence their attitude towards solid waste management in Southern Senatorial District of Cross River State is rejected at the 0.05 level of significance. To find out the direction of influence a Post Hoc test using Fisher's Least Significant Difference (LSD) test was performed as reported in Table 2.

Table 2: Fisher's LSD test of the influence of teachers' educational level on attitude towards solid waste management

Level of education (I)	(J)	Mean difference (I-J)	Standard error	þ-value
NCE	First degree/HND	-3.1095	-7211*	.000
	Master's degree	-4.5987	1.0828*	.000
	PhD	-4.3551	1.2125*	.000
First degree/HND	Master's degree	-1.4892	1.1537	.198
	PhD	-1.2456	1.2762	.330
Master degree	PhD	.2436	1.5103	.872

* Significant at 0.05 level of significance

The information in Table 2 shows that the attitude towards solid waste management of teachers with NCE is significantly lower than that of teachers with first degree/HND; significantly lower than that of teachers with Master's Degree, as well as significantly lower than that of teachers with Ph.D. But teachers with first degree/HND do not significantly differ in their attitude

towards solid waste management from those with Master's Degree and those with PhD teachers with master's degree do not significantly differ in their attitude towards solid waste management from there with PhD in Calabar Education Zone of Cross River State.

Discussion

The hypothesis of this study which was stated in a null form was rejected while the alternate which state that teachers' educational level does not significantly influence attitude towards solid waste management was upheld. This implies that the higher a teachers' educational level, the better his/ her attitude towards solid waste management in Calabar Education Zone of Cross River State, Nigeria. This result is not in doubt because none of the literature reviewed said otherwise. The gap filled in this study is that other studies had first degree and master as the highest educational levels indicated to have significant positive attitude in solid waste management while this study has Ph.D as the highest level of education with a significant positive influence on their attitude towards solid waste management in the study area. This finding of this study in line with the findings of Jatau (2013) who found out that respondents with higher level of education such as B.Ed, HND, M.Ed, Ph.D possessed adequate level of knowledge of the impact of improper waste disposal on health than those with lower level of education like FSLC, SSCE, and NCE.

Conclusion

Based on the results of the findings in this study, the researcher concluded that while there is a significant positive influence of teachers' educational level on solid waste management, concerted effort should be made to influence teachers' marital status on their attitude towards solid waste management in Calabar Education Zone of Cross River State, Nigeria. Similarly, adequate solid waste management practice should be put in place with strict parameters put in place to ensure compliance.

Recommendations

The following recommendations are made in this study based on the results of the findings;

1. There is need for students of Environmental Education who will become teachers in secondary schools to be trained properly to have positive attitude towards solid waste management.
2. There is need for more sensitization on solid waste management for a change of attitude by the male in the study area.
3. There is need for adequate policy mechanism in place to promote male and female teachers' participation in solid waste management in the study area.
4. Though teachers' attitude to solid waste management generally is significant, teachers' marital differences should not be a barrier to solid waste management

References

Ambe, B. A., Unimna, F. A., & Onnoghen, U. N. (2019). Achieving Statewide Open Defecation Free (ODF) Status in Cross River State: The Role of Transitory Truckers in Calabar and Environs.

Abimbola, S. H. (2012). Household wastes and management strategies in central Africa. *Journal of Environmental Science and Management,* 2 96), 906-1006.

Ahmed, Y. A. (2011). Environmental literacy and attitude change among farmers in southern senatorial district of cross river state. *Journal of Environmental Science,* 4 (7), 35-39.

Anijah-Obi, F. N. (2015). *Fundamentals of Environmental Education*. Calabar: University Press.

Coertjens, L., Pauw, J. B., Maeyer, S. D., &Petegem, P. V. (2010). Do Schools Make a Difference in Their Students' Environmental Attitudes and Awareness? Evidence from Pisa 2006.*International Journal of Science and Mathematics Education*, 7 (10), 116 – 123.

Emmanue, I. A., & Ambe, B. A. (2014). Influence of teachers, professional qualification, and area of specialisation on the implementation of environmental education curriculum in Cross River State–Nigeria. In *International Conference on Chemical, Environment & Biological Sciences (CEBS)(155–160). http://dx. doi. org/10.15242/IICBE C* (Vol. 914120).

Emeh, J. U. (2020). Production, consumption and environmental management. Enugu: University Press.

Emeh, J.U. (2017). Waste Management cost: The Nigeria perspective. Environmental Education monograph series. University of Calabar. Unpublished

Etefia, T.E (2016). Community participation in environmental sanitation and hygiene. What role is the government doing to sustain this? International Journal of Tourism and Hospitality Education, 12 (3), 109-124

Gallagher, L., Ferreira, S., &Convery, F. (2015). Public Attitudes towards Solid Waste Landfill Infrastructure: Changes in perception over space and time. *Environmental Studies Research Series*. 87 – 93.

Jatau, A. A. (2013). Knowledge, Attitudes, and Practices Associated with Waste Management in Jos South Metropolis, Plateau State. *Mediterranean Journal of Social Sciences*, 12(8), 89 – 102.

Lepose, M. L. & Mettler, S. (2019). Education and attitudinal change towards indiscriminate waste disposal. *Journal of Social Studies,* 43 (3), 86-95.

Michael, H. E. (2018). Solid waste disposal and management. Student monograph: Calabar. University of Calabar Press.

Miller, H. L. (2013). Environmental management: perspective and practice. Manchester: University Press.

Obot, A. E. (2014). Educational attainment and Environmental degradation in Nigeria. *Journal of Environmental Education,* 13 (2), 64-72.

Owerri, P. O. U., Uwakwe, K. A., Egenti, N. B., Okwuoha, A. P., &Nkwocha, I. B. (2015). Assessment of Waste Management Practices among Residents of Owerri Municipal, Imo State, Nigeria. *Journal of Environmental Protection*, 1 (7), 32 – 42.

Richard, C. N. (2012). Storm water knowledge, attitude and behaviours: a 2005 survey of North Carolina residents. Sacramento, California, Storm water Unit, Division of Environmental Analysis, http:// www. ncstormwater. org/pdfs/ stormwater_survey)_ 12506.pdf accessed 5 September, 2015.