



Using Appreciative Inquiry, Community Theatre and Collaborative Engagement to Improve Environmental Sanitation Habits of People in Ibarapa, Oyo State, Nigeria

Adetoro Rasheed Adenrele^{1*}, Oladapo Oludare Samuel²
and Ogundele Adeolu Tunde²

¹Department of Social Studies, Federal College of Education, P.M.B. 2096, Abeokuta, Nigeria.

²Department of Geography, Emmanuel Alayande College of Education, Lanlate, Nigeria.

Authors' Contributions

This work was carried out in collaboration between all authors sponsored by TetFund, Nigeria. Author ARA designed the study, searched and managed the literature, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors OOS and OAT managed the analyses of the study. All authors performed the field work, read and approved the final manuscript.

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ABSTRACT

The poor state of environmental sanitation in Ibarapa East Local Government area of Oyo State was worrisome. A three-phase intervention measures adopted for this study were appreciative inquiry questionnaire, awareness creation with community theatre and collaborative engagements with a review of the intervention measures that lasted for six months. Simple percentages and t-test statistics were used to analyse the questionnaire items. The post-field intervention results on the effect of the community theatre and collaborative intervention measures on environmental sanitation habits proved significant with $t_{(2,145)} = 5.276, P < 0.05$ and $t_{(2,145)} = 4.031, P < 0.05$

*Corresponding author: E-mail: radetoro2001@yahoo.com;

respectively. It was therefore recommended that while appreciative inquiry is desirable to re-awaken peoples' sense of situation analysis on environmental sanitation, the community theatre is needed to fire their imagination and thought in the right direction while collaborative engagements using participant models would motivate the people into action.

Keywords: Appreciative inquiry; community theatre; collaborative engagement; environmental sanitation habits.

1. INTRODUCTION

It is generally observed that one of the pervasive challenges facing most poverty ridden nations of the world is environmental abuse. Nigeria is ranked as 134 out of 178 nations in environmental friendliness ranking in the world with a score of 39.20% in 2014 and 3.73% ten – year change [1]. The commonest environmental abuse in Nigeria and elsewhere is environmental pollution through poor environmental sanitation habits. This is noticeable in communities comprising of Eruwa, Lanlate, Maya, Agasa, Akolu, Apanpa, Okele, Owewe and Obaseeku in Ibarapa East Local Government Area of Oyo State, Nigeria. According to Ogundele [2], the outcrops, bushes and rivers near residential areas in the communities were greatly abused by turning them into dumpsites for refuse and human excreta.

Ogundele's findings further revealed that 56% of the sewage in the communities were disposed into the bush around residential areas. More of the findings revealed that there was "laissez – faire" attitude on the part of the people towards dumping of refuse with 28.25% burning their waste within their residential environment, 26.68% disposing their waste in unkempt dumpsites/landfills while 45.07% disposing their indiscriminately in both drainage/open space and streams/rivers [2].

Although the attendant consequences of these unwholesome lackadaisical attitude in environmental abuse has not been well documented but Ogundele reported that wide outbreak of diseases like typhoid fever, dysentery, diarrhea, cholera, yaws etc. had been recorded in the recent past. Nevertheless, his findings revealed that poor environmental sanitation attitude is apparent in the communities due to lack of peoples' mobilization, consultation and involvement in environmental sanitation and waste management programmes. This is why the application of appreciative inquiry, community theatre and collaborative engagements were necessary to positively change the attitude/

habits of the people of Ibarapa East Local Government Area of Oyo State towards good and sustainable environmental sanitation.

1.1 Objectives of the Project

Consequently, the objectives of this project were:

- To use appreciative inquiry to increase the awareness of the people of Ibarapa East Local Government Area of Oyo State on poor environmental sanitation in their locality.
- To stage community theatre on the need to change the peoples' attitude towards good environmental hygiene in the communities.
- To use collaborative engagements to promote good sanitation habits in order to achieve 2030 Sustainable Development Goals (SDGs) of:
(a) ensuring healthy living and well-being,
(b) ensuring sustainable management of sanitation for all, and
(c) make cities and human settlements inclusive, safe, resilient and sustainable [3], in Ibarapa East Local Government Area of Oyo State.

1.2 Hypotheses

1. There is no significant difference between the pre and post-attitude of the people of Ibarapa towards environmental sanitation.
2. There is no significant difference between the pre and post-impact of community theatre on Ibarapa peoples' environment habits.
3. There is no significant difference between pre and post-impact of collaborative engagements on Ibarapa peoples' environmental habits.

2. LITERATURE REVIEW

Environmental sanitation refers to good and sustainable living within the environment. Referring to the Federal Republic of Nigeria [4]

on Environmental Sanitation (ES) policy, ES can be defined as the principles and practice of effecting healthful and hygienic conditions in the environment to promote public health and welfare, improve quality of life and ensure a sustainable environment.

WHO as noted by Ogundele [2], Owoeye and Adedeji [5] observed a strong relationship between health and the environment such that the quality of an environment has great impact on the health status of the individual within the environment. Earlier Nwankwo as cited by Anunonwu et al. [6] has revealed that the objective of ES is to create and maintain an environment that will promote good health and prevent diseases. This is why the global attention on environmental issues for the past two decades according to Owoeye and Adedeji [5] is "Green Agenda" which involves issues like the ozone layer depletion, global warming, and the 'Brown Agenda' such as inadequate water supply, sanitation, drainage, solid waste services, poor urban and industrial waste management as well as air pollution.

Researchers have proved that the ES problem in Nigeria needs both a change in behaviour and collaborative engagement efforts [2,7,8]. Supporting Mansaray, Ajiboye and Adu; Anijaobi-Idem et al. [8] suggested public environmental education and active involvement of people in improving sanitation in Nigeria. Mmom and

Mmom [7] noted the need for interventions to reduce peoples' exposure to diseases by providing a clean environment in which to live well and break the cycle of diseases. Therefore Ikeke [9] calls for environmental reorientation and practical efforts to eliminate dirty environment that has provided breeding ground for mosquitoes, germs and other life-threatening organisms in Nigeria. This also necessitates cross-cutting environmental education for socio-environmental changes to make people develop competencies, values, attitudes and capacities as regards values of environmental respect [10]. This is why Dakwa [11] suggests 'Education for Sustainable Development' (ESD) to promote multi-stakeholder social learning for sustainable future.

Two theories were used to guide the application of appreciative inquiry, community theatre and collaborative engagements in this project. These are Situation Awareness (SA) and Participant Modelling (PM) theories. According to Endsley [12]: Situation awareness is the perception of elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future. Indeed a person's perception of the relevant elements in the environment as determined by his/her senses forms the basis for his or her SA. Then action selection and performance will proceed from SA. This process, according to Stanton, Chambers and Piggott [13]

Situation Awareness

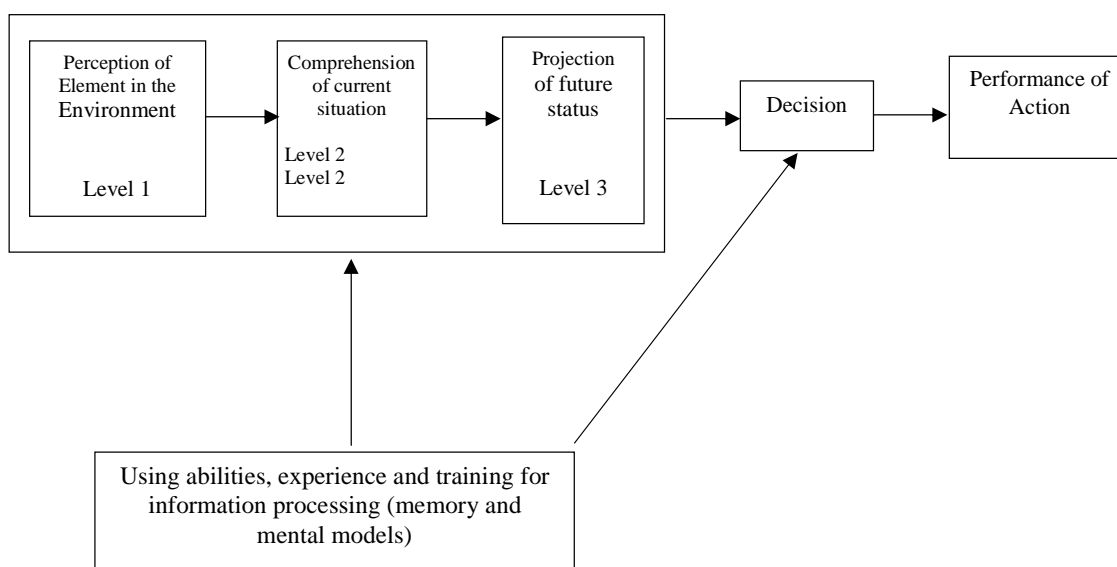


Fig. 1. Situation awareness adapted from Endsley [12]

follows that a person's working memory and mental models will draw from knowledge, skills and experience to reflect and project to the world of sustainability. Consequently, as illustrated in Fig. 1, it is hypothesized that SA is a function of individual's information – processing mechanisms, influenced by innate abilities, experience and training [12].

On the other hand, participant modelling is a construct drawn from social learning theory. Indeed, Lopes, Fam and Williams [14] attested to the importance of social learning in sustainable sanitation. According to Bandura [15], Participant Modelling (PM) is an observational learning strategy guided by performance – based treatments. In the view of Rosenthal and Bandura [16], P.M. makes individual to acquire new patterns of behaviour and coping strategies through initiation of role models and positive incentives.

PRIME [17] identified the process of participant modelling to include the following:

- A collective review of evidence supporting the intervention. This is known as the debriefing process.
- Reviewing intervention rationale to include its potential benefits with the implementers.
- Deciding the order to model the intervention steps using “implementation scenario” in the presence of the participants.
- Gather materials needed for the participant modelling, using written list of target intervention steps, items needed to practice and tangible reinforces.
- Make demonstration and continue the guided practice until the implementers have mastered each intervention step.
- Allow implementers independent practice with provision for success reinforcement and errors correction.
- Discuss skill generalization, monitor the intervention actions and discuss the feedback.

In a review of evidence – based literature on participant modelling, Adetoro [18] discovered that collaborative engagement is a product of social learning. According to him, Adamolekun [19] discovered that P.M. allows social learning process to include initial observation of a model, the performance of a graded series of tasks with the assistance of model at a carefully spaced intervals, and a gradual phasing-out of supportive aids, leaving the individual progressively dependent on his or her own efforts. In other words, such strategy would enable the individual to develop “a sense of self-efficacy, the expectation that one can, by one's personal efforts, master situations and bring about desired outcomes in a group” [19]. These are what Jerkins [20] and Kester [21] called preparation for “pedagogies of engagement” which are to promote community values and practices of sharing, caring and fellowship.

In order to achieve situation awareness in this project, appreciative inquiry strategy is desirable. As a strategy to improve social practice, A.I. involves art and practice of asking questions that strengthen a system's capacity to anticipate and heighten positive potential of a group of people to discover, dream, design and deliver solutions to their environmental problems [22].

AI according to Cooperrider and Whitney [23], has “4-D” cycle including discovery stage that involves appreciating what the environmental situation is; dreaming stage involving the envisioning of what the environmental situation might be if certain actions had been taken; designing stage which involves dialogue about what the environmental situation should be (co-constructing stage) and destiny stage which involves innovating what will be through empowerment, adjustment and improvisation to execute the proposed design for sustaining hygienic environment (see Fig. 3).

Community theatre for hygienic attitude on the other hand, is to serve as a dramatic reflection of the appreciative inquiry. This is why theatre is a direct reflection of the yearning of the people in

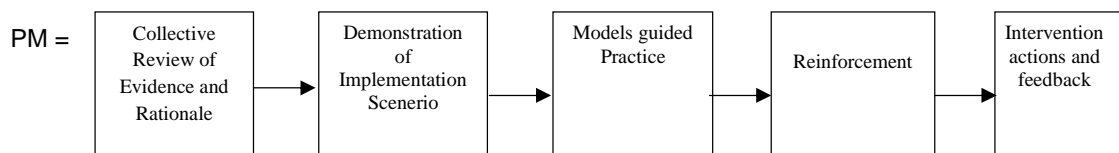


Fig. 2. Participants modelling adapted from Bandura [15]

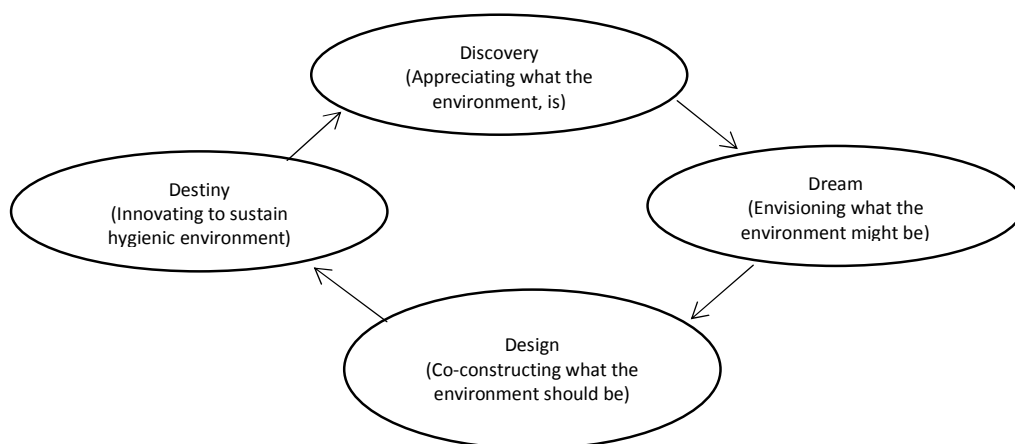


Fig. 3. Appreciative Inquiry “4-D” cycle adapted from Cooperrider and Whitney [23]

order to find expressions and solutions to life-threatening problems [24]. Theatre also helps to expose moral evils in human attitudes and behaviour by interpreting historical trends and clarifying future needs and conditions [25]. It does this by raising the level of consciousness of the people for community participation drawing extensive inputs from members of the community, the facilitators and other stakeholders in the development initiatives [25]. It is a problem-solving performance oriented process to galvanise a community to action for solving environmental problem. Consequently, this study applied community theatre as one of the strategies to improve the environmental sanitation habit of the people of Ibarapa because “it is he who wears the shoe that can tell where it pinches” [26]. The title of the specific community theatre so acted was on hygiene called ‘Imo-to-to’ and it followed six stages thus:

1. Script writing by an expert in community theatre.

2. Participant Actors selection from Ibarapa people with their local dialect.
3. Script discussion with the participant actors.
4. Rehearsals of the drama facilitated by the script writer.
5. Scenario acting in the selected town halls in Lanlate, Eruwa and Maya.
6. Review of the theatre gains by audience answering the Community Theatre Environmental Sanitation Habit Questionnaires (CTESHQ) e. g.
 - . What are the lessons from this community theatre on environmental sanitation?
 - . Did this drama motivate you to becoming a volunteer in environmental sanitation?
 - . Had this drama motivated you to join an environmental sanitation club?

The six stages of the community theatre management can be diagrammatically illustrated thus:

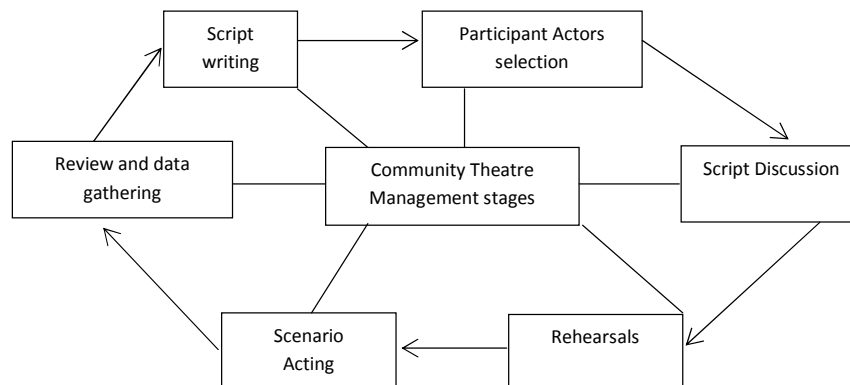


Fig. 4. Community theatre management stages

Source: Adapted from Komolafe [25]

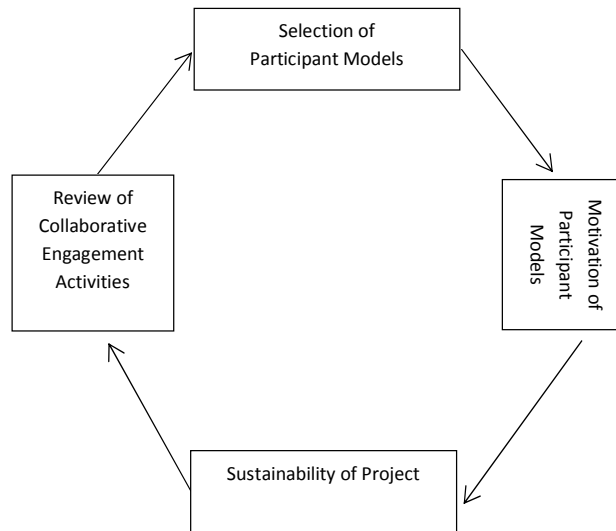


Fig. 5. Collaborative engagement life – cycle

Source: Association of Information and Image Management [31]

Collaborative Engagement however, is a partnering process through which individuals, groups and organizations have the opportunity to become actively involved in a project or programme of activity [27]. According to the United Nations Environment Programme Finance Initiative (UNEP, FI) [28], Collaborative Engagement is a process of collective fresh looking at things with the hope of getting new ideas to test different approaches and skills to engagement in order to get better results. Thus, C.E is widely acknowledged by experts as an increasingly important efficient vehicle for waste disposal and management [27,29].

Radtke [30] opined that the effectiveness of collaborative initiatives depends on civic participation, cross – sector collaborations, trust and commitment, social networking, ownership structures, hands on installation and maintenance by the stakeholders. This civic engagement is based on promotes the idea of green citizenship that environmental friendliness [30].

In practical sense however, the Association of Information and Image Management [31] adapted model of Collaborative Engagement (see Fig. 5) was applied for intervention measures in this project. It involved four cyclical steps thus:

- Selection of participant models for intervention activities.

- Motivation of participant models in the intervention activities.
- Sustainability of the project through constant mobilization efforts of the participant models.
- Review of Collaborative Engagement activities among all the stakeholders and participant models.

3. METHODOLOGY

3.1 Research Design

This action research adopted a three phase intervention strategies using appreciative inquiry, community theatre and collaborative engagements in improving peoples' environmental sanitation habit at Lanlate, Eruwa and Maya towns in Ibarapa East Local Government, Oyo State.

3.2 Area of Study

Lanlate, Eruwa and Maya serve as commercial centres in Ibarapa East Local Government Area of Oyo State lying between longitude 3°15' and 3°35' East and latitude 7°25' and latitude 7°25' North of the equator. They are located in tropical climatic belt with a mean annual temperature of 27°C (an annual range of 8°C) and a yearly rainfall of between 150 cms and 200 cms from April to September every year [32].

3.3 Population of Study

According to Ogundiran, Obanisola and Adebisi [33], Eruwa has a population of 30,659; Lanlate 12,996, and Maya 1405 (judging from 2006 population census) with Ibarapa Polytechnic at Eruwa, Emmanuel Alayande College of Education, Oyo Lanlate campus and the five-daily marketing at Maya significantly contributing to the daily increase in the population of the localities (45,060 out of 118,226 people).

3.4 Samples and Sampling Techniques

A total samples of 450 adults (including the three kings, fifteen chiefs, one local government chairman, three health officers and three sanitary inspectors) were randomly selected from the three communities (Eruwa, Lanlate and Maya) for the study. They were involved in answering Appreciative Inquiry Questionnaires, participated in community theatre and 15 of them (that were well trained) served as the Participant Models in collaborative engagements. Furthermore, sixteen Research Assistants were engaged for the administration of the questionnaires.

3.5 Instrumentation and Validity Test

The questionnaire items on appreciative inquiry, community theatre and collaborative engagements in environmental sanitation were validated by two Geographers and a Social Studies Educator who after their moderations confirmed their face validity. Furthermore, after two weeks of interval on pilot questionnaires' administration on twenty adult members (who were not part of the samples) in the three localities, a correlation index of Pearson r 0.67 was obtained.

3.6 The Intervention Actions

The intervention measures which lasted 20 weeks included:

3.6.1 1st Intervention phase

Using questionnaire on appreciative inquiry adapted from Cooperrider and Whitney [23]; Mohr and Watkins [34] to make people become more aware and appreciative of the poor environmental sanitation in Eruwa, Lanlate and Maya areas of Ibarapa, dream the preferred future environment, design the preferred future environment and innovate and improvise ways to create the preferred future environment.

3.6.2 2nd Intervention phase

Participant Actors were selected for the community theatre, script discussions made, rehearsals of the drama facilitated by the script writer, followed by scenario acting in the selected town halls in Lanlate, Eruwa and Maya with the review of the theatre gains by the audience.

3.6.3 3rd Intervention phase

Collaborative Engagements as adapted from Association of Information and Image Management [31] was undertaken to motivate the Participant Models to evacuate the existing scattered wastes from their present location to the new dumpsites and clear the blocked drainages. Health Officers were also admonished to follow-up the collaborative engagements in the localities. After 3-months, the Participant Models were engaged in evaluating the project thus:

- How would you rate the attitude of the people to environmental sanitation in the community?
(a) Very Good (b) Good (c) Average (d) Poor
- How would you rate the status of refuse disposal in this community?
(a) Very Good (b) Good (c) Average (d) Poor
- How would you rate the status of drainage and sewage in this community?
(a) Very Good (b) Good (c) Average (d) Poor
- How would you rate the peoples' need for appropriate environmental sanitation community theatre?
(a) Greatly needed (b) Needed (c) Occasionally needed (d) Not needed
- How would you rate the peoples' experience on environmental sanitation community theatre?
(a) Very adequate (b) Adequate (c) Partially adequate (d) Not adequate
- How would you rate the impact of environmental sanitation community theatre in this environment?
(a) Great impact (b) Impact (c) Partial impact (d) Poor impact
- How would you rate peoples' current status of collaborative engagements on environmental sanitation?
(a) Very Good (b) Good (c) Average (d) Poor
- How would you rate the peoples' readiness for collaborative engagements in environmental sanitation?

- (a) Very ready (b) Ready (c) Occasionally ready (d) Not ready
- How would you rate the current impact of collaborative engagements in environmental sanitation in this community?
 - (a) Great impact (b) Impact (c) Partial impact (d) Poor impact

3.7 Method of Data Analysis

The section A and B of the Appreciative Inquiry Questionnaires on Environmental Sanitation Habit (AIQESH), Community Theatre Environmental Sanitation Habit (CTESH) and Collaborative Engagements in Environmental Sanitation (CEES) were analysed with frequency counts and percentages while items on pre and post attitude of the people to environmental sanitation, impact of the community theatre and impact of the collaborative engagements' ratings on 4-Likert scales by the Participant Models were analysed with t-test statistics.

3.8 Test of Hypotheses

HO₁: There is no significant difference between the pre and post-attitude of the people of Ibarapa towards environmental sanitation.

As can be seen in Table 1, there existed a significant difference in the pre and post attitude of the people of Ibarapa towards environmental

sanitation. This is because the calculated t-score of 5.880 is greater than the critical-value of 2.048 at P<0.05. This rated by the participant models (PM) indicates that as at the end of the experiment, the people gained a positive attitudinal change score of 1.47.

HO₂: There is no significant difference between the pre and post-impact of community theatre on Ibarapa peoples' environmental sanitation habits.

The result in Table 2 reveals a significant impact of community theatre on Ibarapa peoples' environmental sanitation habit because the calculated t-value of 5.276 is greater than the critical-value of 2.048 at P<0.05. Hence, there is a significant difference between the pre and post environmental sanitation habits of the people based on community theatre engagements.

HO₃: There is no significant difference in pre and post impact of collaborative engagements on Ibarapa peoples' environmental sanitation habits.

As can be seen from Table 3, there is a significant difference between the pre and post-impact of collaborative engagements on Ibarapa peoples' environmental sanitation habits because the calculated t-value of 4.031 is greater than the critical-value of 2.048 at P< 0.05 . Hence, the null hypothesis is hereby rejected.

Table 1. T-test Analysis on the pre and post –attitude of Ibarapa people on environmental sanitation

Categories	N	-X	SD	Df	t-cal	crit-value	Decision
Post-Attitude sanitation	15	3.00	0.65	28	5.880	2.048	Sig
Pre-Attitude on sanitation	15	1.53	0.52				

$t_{(2,145)} = 5.880, p < 0.05$

Table 2. T-test analysis on the pre and post-impact of community theatre on Ibarapa peoples' environmental sanitation habits

Categories	N	- X	SD	df	t-cal	crit-value	Decision
Post-Community Theatre Impact	15	3.13	0.92	28	5.276	2.048	Sig
Pre- Community Theatre Impact	15	1.60	0.74				

$t_{(2,145)} = 5.276, P < 0.05$

Table 3. T-test analysis on the pre and post impact of collaborative engagement on Ibarapa peoples' environmental sanitation habits

Categories	N	- X	SD	Df	t-cal	Crit-value	Decision
Post-Collaborative Engagement Habits	15	3.33	0.49	28	4.031	2.048	sig
Pre- Collaborative Engagement Habits	15	2.07	1.10				

$\therefore t_{(2,145)} = 4.031, P < 0.05$

4. DISCUSSION

The three research hypotheses that were tested in this project proved significant in outcomes. First, there was a significant difference between the pre and post-attitude of the people towards environmental sanitation. Initially, the people seemed indifferent to their environmental sanitation habits with them raising concern about the locality's environmental sanitation habit (96.7%), noticing drainage blockages (67.8%), littering of ground with refuse (69.7%) and disposing of refuse in public bays with human excreta (74.6%). However, the post-attitude test revealed a positive improvement in the attitude of the people towards environmental sanitation habit with an increased mean score of 1.47 i.e. 3-1.53 (see Table 1). This positive attitudinal change is in line with the theory of Kessler [35] that appreciative inquiry usually result in better, more effective, convivial and sustainable environmental system because people will be able "to discover, dream, design and deliver solutions to their environmental problems" [22, 23]. It also aligns with the principle of constructionism where people construct the environment they inhabit [36].

The second significant result was on the impact of community theatre on the peoples' environmental sanitation habits. According to the finding, the mean score difference between the pre-community theatre experience and the post-community theatre experience was 1.53 with a t-calculated score of 5.276 (see Table 2). This is in line with the submission of Idogho [37] that community theatre is a "direct reflection of the yearning of the people in order to find expressions and solutions to life threatening problems" [24]. It is also for clarifying future needs and conditions [25], calling people to action for better future [37].

The third significant outcome was the impact of collaborative engagements such as using the participant models to mobilize the community people to clear the blocked drainages, the littered refuse and digging of new dump sites far away in the bush. The mean score difference between the pre – collaborative stage and the post – collaborative stage was 1.26 with a t-test value of 4.031 proving significant at 0.05 level of probability. This result is in line with the findings of Shen and Wu (2005) in the works of Adetola et al. [27] that collaborative engagement is an efficient vehicle for waste disposal and management. It is also in tandem with the

submission of Radtke [30] that collaborative initiative is a civic engagement that promotes 'green citizenship and environmental friendliness'.

5. RECOMMENDATIONS

Judging from the outcomes of this study, it is hereby recommended that:

- Appreciative Inquiry using series of structured questionnaire items and interview questions is essential to create environmental situation awareness. This would lead to perception of the elements in the environment, comprehension of a poor state of environmental sanitation, projection of a desired future status and a ready – stage for collaborative action.
- Community theatre is desirable for calling peoples' attention to an unhygienic environmental sanitation habit with the hope of gingering peoples' mind to correct the situation. It is also required to call peoples' attention to the consequences of their poor environmental sanitation habit in order to fashion a better attitude.
- Collaborative engagement for environmental sanitation should be fashioned along Bandura's social learning theory, using participant models to facilitate the right environmental sanitation behaviour in the community. This is to let the trained environmental sanitation models teach others so that others can also do it well. It is therefore essential that collaborative engagement for environmental sanitation requires a lot of incentives and tools such as provision of motorized refuse bays, shovels, rakes etc. for clearing refuse in the community.
- Some Environmental Sanitation Participant Models (ESPM) are required to be selected and trained from each wards and they are to be attending quarterly meetings with the local government Health Officers in order to build-up a good synergy for good environmental sanitation.
- Health Officers are admonished to be more alive to their responsibilities of regularly visiting the communities to enforce environmental sanitation compliance. Adequate vehicles with generous allowances should be provided for the health officers in order to motivate them to perform their duties well.

- Regular advocacy programmes are needed in the communities on good environmental sanitation habits and hygienic living.
- There is an urgent need for construction of more public toilets since most of the communities are made – up of low – income earners in the rural sector and many of the houses have no toilets. This can be done through public – private partnership as people indicated their willingness to pay for the toilet services. Indigenous and outside philanthropists can also be invited to the communities to donate modern public toilets to be managed for the communities by the environmental sanitation participant models.

6. CONCLUSION

There is no doubt that health is wealth and most of the contagious diseases emanate from poor environmental sanitation. However, the use of appreciative inquiry combined with appropriate community theatre and collaborative engagements are necessities to improve environmental sanitation habits in Nigeria. Indeed, when community people are sensitized to their poor environmental sanitation situation with a reflecting drama, they are most likely to be willing to change their habits positively. Hence, it is essential that all and sundry must be called to action through collaborative initiatives to build a culture of good environmental sanitation in Nigeria.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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