

## **Assessing the Impact of Environmental Sustainability Education on Healthy Wellbeing among Secondary School Teachers in Rivers State, Nigeria**

**NWEKE, Dorathy Chikaodi & AMACHREE, Telema**  
Rivers State University, Port Harcourt,  
Department of Adult Education & Community Development  
Corresponding Author's Email: telemaamachree09@gmail.com  
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### **Abstract**

*The purpose of this study is to investigate the impact of environmental sustainability education on healthy wellbeing among teachers in senior secondary schools in Rivers State, Nigeria. The design for this study is a descriptive survey, which involves describing the existing situation without manipulating the study subjects. The population consisted of 247 government-owned senior secondary schools in Rivers State, with a total of 8,452 principals and teachers. This includes 247 principals and 8,205 teaching staff, comprising 4,413 male staff and 4,039 female staff. A sample size of 400 principals and teaching staff was determined using the Taro Yamane formula. The sample was drawn using a stratified random sampling technique. The sample drawn consisted of 167 males and 233 females from three secondary schools in the three senatorial districts of Rivers South-East, West, and Rivers East. The research instrument used was a questionnaire titled "Assessing the Impact of Environmental Sustainability Education on Healthy Wellbeing Among Secondary School Teachers in Rivers State, Nigeria (AIESEHWASSRSN)," developed by the researchers. The questionnaire was validated by three experts in Educational Management. The reliability was established using the test-retest method, and the results were correlated with Pearson's Product Moment Correlation coefficient, which yielded an index of 0.77. The results obtained show that there is no significant difference between the responses of male and female teachers regarding the factors influencing environmental sustainability education and its effectiveness in promoting healthy wellbeing among teachers in senior secondary schools in Rivers State. It was also found that there is a significant difference between the responses of male and female teachers regarding the level of environmental awareness and knowledge, and the impact of environmental sustainability education on the health and wellbeing of teachers in senior secondary schools in Rivers State. The study's results have implications for the development of targeted interventions and training programs aimed at promoting environmental sustainability education and improving the health and wellbeing of teachers in senior secondary schools in Rivers State.*

**Keywords:** *Environment, Sustainability, Education & Healthy Wellbeing,*

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## **INTRODUCTION**

In the face of increasing environmental challenges and a global call for sustainability, environmental sustainability education (ESE) has emerged as a critical area of focus within education systems worldwide. In Nigeria, the importance of ESE in fostering a sustainable future is becoming increasingly recognized, particularly within the context of secondary schools. Teachers, as key stakeholders in the educational process, play a pivotal role in the integration and delivery of environmental education to students. However, the impact of ESE on teachers themselves, particularly in terms of their health and wellbeing, remains an underexplored area of research (Edikpa, Nwabueze, & Chukwuma, 2018).

This study aims to assess the impact of environmental sustainability education on the health and wellbeing of teachers in senior secondary schools in Rivers State, Nigeria. The research will investigate the factors that influence the effectiveness of ESE in promoting healthy wellbeing among teachers, explore the level of environmental awareness and knowledge among teachers, and evaluate how ESE affects their physical and mental health (Madumere-Obike, Nwabueze, & Ukala, 2013). The findings from this study are important for understanding how environmental education a tool for can be not only enhancing students' environmental consciousness but also improving the overall wellbeing of teachers who are integral to the success of educational programs.

The specific objectives of the study are to identify the key factors that influence the effectiveness of environmental sustainability education in promoting healthy wellbeing among teachers, assess the level of environmental awareness and knowledge among teachers in Rivers State, and determine the impact of environmental sustainability education on the health and wellbeing of teachers in senior secondary schools. By achieving these objectives, the study will contribute to the broader understanding of how ESE can be used to improve teacher wellbeing, with potential implications for policy and practice in secondary education. Ultimately, the research aims to provide actionable insights for improving the delivery of environmental sustainability education and supporting the health and wellbeing of educators in Nigeria.

### **STATEMENT OF THE PROBLEM:**

Rivers State, Nigeria, is home to a range of environmental challenges, including pollution from oil spills, deforestation, waste management issues, and water contamination. These environmental factors have a significant impact on public health, contributing to diseases such as malaria, cholera, respiratory conditions, and other health issues. Despite the environmental challenges, education on environmental sustainability remains insufficiently emphasized in schools and communities in Rivers State. This research aims to investigate how education for environmental sustainability can promote healthier lifestyles and improve wellbeing in Rivers State, where communities often lack adequate knowledge of sustainable practices and the health consequences of environmental degradation

### **Objectives of the Study**

The purpose of this study was to investigate the impact of environmental sustainability education on healthy wellbeing among secondary school Teachers in Rivers State, Nigeria. Specifically, the objectives of the study were to:

1. Identify the factors that influence the effectiveness of environmental sustainability education in promoting healthy wellbeing among Teachers in senior secondary school Teachers in Rivers State.
2. Determine the level of environmental awareness and knowledge among Teachers in senior secondary school in Rivers State.
3. Explore how environmental sustainability education have impacts on health and wellbeing of Teachers in senior secondary school in Rivers State.

### **Research Questions**

1. What are the key factors that influence the effectiveness of environmental sustainability education in promoting healthy wellbeing among Teachers in senior secondary school in Rivers State?
2. What is the level of environmental awareness and knowledge about sustainability issues among Teachers in senior secondary school in Rivers State?
3. How does environmental sustainability education have impact on the health and wellbeing of Teachers in senior secondary school in Rivers State?

### **Hypotheses:**

1. There is no significant difference between the responses of male and female teachers regarding the factors influencing environmental sustainability education and its effectiveness in promoting healthy wellbeing among teachers in senior secondary schools in Rivers State.
2. There is no significant difference between the responses of male and female teachers regarding the level of environmental awareness and knowledge among teachers in senior secondary schools in Rivers State.
3. There is no significant difference between the responses of male and female teachers regarding the impact of environmental sustainability education on the health and wellbeing of teachers in senior secondary schools in Rivers State.

### **Methodology**

The design for this study was descriptive survey, which involves the description of existing situation without manipulating the study subjects. The population consisted of 247 government-owned senior secondary schools in Rivers State, with a total of 8,452 principals and teachers. This includes 247 principals and 8,205 teaching staff, comprising 4,413 male staff and 4,039 female staff. A sample size of 400 principals and teaching staff were determined using the Taro Yamane formula. The sample was drawn using a stratified random sampling technique. The sample was

drawn using a stratified random sampling technique. The sample drawn were 167 male and 233 female from three secondary schools in the three senatorial districts of Rivers South-East, West and Rivers East. The research instrument used was questionnaire titled “Assessing the Impact of Environmental Sustainability Education on Healthy Wellbeing among Secondary School Teachers in Rivers State, Nigeria (AIESEHWASSRSN)” developed by the researchers. The questionnaire was validated by three experts in Educational Management. The reliability was established using test-retest method, results were correlated with Pearson’s Product Moment Correlation coefficient, which yielded an index of 0.77. Mean scores and standard deviation were used as the statistical tools to answer the three research questions raised. Based on this, a criterion mean of 2.50 was calculated to assess the mean responses from the respondents. Hence, if the mean response falls within and above the criterion mean of 2.50, the response is agreed otherwise disagreed upon.

## Results

**Research Question One:** What are the key factors that influence the effectiveness of environmental sustainability education in promoting healthy wellbeing among teachers in senior secondary school in Rivers State?

Table 1: Mean scores of Respondents Responses on key factors that influence the effectiveness of environmental sustainability education in promoting healthy wellbeing among secondary school Teacher’s in Rivers State

S/ N	Key factors that influence the effectiveness of environmental sustainability education in promoting healthy wellbeing include:	Male (n=167)		Female (n=233)		Mean Set	Remarks
		Mean	SD	Mean	SD		
1	Curriculum relevance promotes healthy wellbeing among teachers.	3.31	0.25	3.24	0.3	3.26	Agreed
2	Teacher training enhances environmental sustainability education.	3.54	0.24	3.21	0.3	3.38	Agreed
3	School environment affects teachers' wellbeing	3.22	0.26	3.27	0.3	3.25	Agreed
4	Community involvement boosts environmental sustainability education.	3.11	0.27	3.14	0.3	3.13	Agreed
5	Environmental education improves teachers' wellbeing.	3.22	0.26	3.22	0.3	3.22	Agreed
6	Curriculum content promotes sustainability.	3.17	0.26	3.15	0.3	3.16	Agreed
7	Teacher training enhances environmental education.	3.3	0.25	3.27	0.2	3.29	Agreed
8	School environment affects teachers' health.	3.26	0.25	3.28	0.2	3.27	Agreed

9	Community involvement boosts environmental education.	2.88	0.27	3.11	0.31	3	Agreed
10	School policies support environmental sustainability.	3.32	0.25	3.29	0.29	3.31	Agreed
<b>Grant Mean</b>		<b>3.23</b>	<b>0.26</b>	<b>3.22</b>	<b>0.3</b>	<b>3.22</b>	<b>Agreed</b>

Table 1 showed the mean scores of respondents on key factors that influence the effectiveness of environmental sustainability education in promoting healthy wellbeing among secondary school Teachers in Rivers State. Respondents agreed on the items as all the mean scores greater than the mean criterion of 2.5. The grand mean score of 3.23 and 3.22 for male and female teachers respectively showed that, they agreed on the items in the table. Therefore, the key factors that influence the effectiveness of environmental sustainability education in promoting healthy wellbeing among teachers in senior secondary school in Rivers State include; the school curriculum, teacher training, school environment, community involvement, environmental education, curriculum content, regular teacher training to enhance environmental education, school environment, community involvement and school policies to support environmental sustainability

**Research Question Two:** To what extent is the level of environmental awareness and knowledge about sustainability issues among secondary school Teachers in Rivers State?

**Table 2:** Mean scores of Respondents Responses on the level of environmental awareness and knowledge about sustainability issues among secondary school Teachers in Rivers State

S/N	The level of environmental awareness and knowledge about sustainability issues among secondary school teachers in rivers state	Male (n=167)		Female (n=233)		Mean Set	Remarks
		Mean	SD	Mean	SD		Mean
11	The major environmental challenges facing Rivers State are the issues of deforestation and water pollution.	3.33	0.34	3.12	0.26	3.23	Agreed
12	The level of environmental awareness is to incorporate sustainability practices, such as energy conservation and waste management, into my teaching activities.	3.44	0.32	3.04	0.27	3.24	Agreed
13	The teachers need to be given adequate professional training on sustainability issues and environmental education.	3.35	0.34	3.22	0.25	3.29	Agreed
14	environmental education is essential for creating awareness of sustainability issues among secondary school teachers	3.28	0.35	3.18	0.26	3.23	Agreed

15	There is need to promote sustainability practices such as recycling, reducing energy consumption within the school community.	3.23	0.36	3.25	0.2	3.24	Agreed
16	knowledge about climate change, biodiversity, and other sustainability challenges need to be adequately taught.	3.38	0.34	3.27	0.2	3.33	Agreed
<b>Grand Mean</b>		<b>3.34</b>	<b>0.34</b>	<b>2.64</b>	<b>0.2</b>	<b>3.240</b>	<b>Agreed</b>
					<b>6</b>		

Table 2 contained the mean scores of respondents on the level of environmental awareness and knowledge about sustainability issues among secondary school teachers in Rivers State. Respondents agreed on the items as all the mean scores are greater than the mean criterion of 2.5. The grand mean score of 3.34 and 2.64 for male while female teachers respectively showed that, the male teacher to an high extent agreed that the level of environmental awareness and knowledge about sustainability issues among secondary school teachers in Rivers State while female teachers disagree as revealed by grand mean of 2.64 as shown in the table. Although, the mean set of 3.240 showed that the level of environmental awareness and knowledge about sustainability issues among secondary school teachers in Rivers State is high. It was noted that the teachers have environmental awareness and knowledge about major environmental challenges facing Rivers State such as deforestation and water pollution, energy conservation and waste management, adequate professional training on sustainability issues, environmental education, recycling, reducing energy consumption within the school community, climate change, biodiversity, and other sustainability challenges

**Research Question Three:** How does environmental sustainability education impact the health and wellbeing of teachers in senior secondary schools in Rivers State?

**Table 3:** Mean scores of respondents Responses on the environmental sustainability education impact the health and wellbeing of teachers in senior secondary schools in Rivers State

S/N	The environmental sustainability education impact the health and wellbeing of teachers in senior secondary schools in Rivers State <b>include:</b>	Male (n=167)		Female (n=233)		Mean Set	Remarks
		Mean	SD	Mean	SD		
17	Environmental sustainability education has improved my awareness of how to maintain a healthier environment in the school.	3.38	0.2	3.26	0.30	3.32	Agreed



18	Engaging in sustainability activities in school has contributed to my physical health by encouraging outdoor activities or exercise	3.11	0.2 7	3.35	0.29	3.23	Agreed
19	Teaching environmental sustainability helps reduce stress by providing me with a sense of purpose and fulfillment in my work.	3.30	0.2 5	3.18	0.31	3.24	Agreed
20	The implementation of green practices in the school, such as recycling and energy conservation, has created a healthier work environment for teachers.	3.52	0.2 4	3.38	0.29	3.45	Agreed
21	Learning about environmental sustainability issues has encouraged me to adopt healthier lifestyle choices, such as improved diet and physical activity.	3.41	0.2 4	3.30	0.29	3.36	Agreed
22	The opportunity to engage with students on environmental sustainability topics has improved my job satisfaction and emotional well-being.	2.19	0.3 4	2.01	0.42	2.10	Disagreed
23	Being involved in sustainability education has reduced my work-related stress by giving me more control over environmental improvements in the school.	3.02	0.2 8	3.41	0.28	3.22	Agreed
24	The promotion of environmental sustainability at school has positively impacted my social well-being by fostering better relationships among teachers, students, and parents.	3.32	0.2 5	3.43	0.28	3.38	Agreed
25	Environmental sustainability education has improved my mental well-being by helping me feel more connected to nature and aware of global environmental issues.	2.82	0.2 9	2.94	0.36	2.88	Agreed
<b>Grand Mean</b>			0.2 7	3.14	0.31	3.131	<b>Agreed</b>

Table 3 showed mean scores of respondents responses on the environmental sustainability education impact the health and wellbeing of teachers in senior secondary schools in Rivers State. Respondents agreed on the items as all the mean scores are greater than the mean criterion of 2.5. The grand mean score of 3.12 and 3.14 for male while female teachers respectively showed that both male and female teachers strongly agreed that the environmental sustainability education

impact the health and wellbeing of teachers in senior secondary schools in Rivers State as shown in the table. This is further confirmed as mean set of 3.13 showed that the environmental sustainability education have impact on the health and wellbeing of teachers in senior secondary schools in Rivers State

### Hypotheses

1. There is no significant difference between the responses of male and female teachers regarding the factors influencing environmental sustainability education and its effectiveness in promoting healthy wellbeing among teachers in senior secondary schools in Rivers State.

Table 4: **Independent Sample t-Test for Statistical difference between the responses of male and female teachers regarding factors influencing environmental sustainability education and its effectiveness in promoting healthy wellbeing among teachers in senior secondary schools in Rivers State**

Site(s)	N	Mean	Std. Dev	95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)	Remarks
				Lower	Upper				
Male	167	<b>3.23</b>	<b>0.26</b>			0.347	398	0.7286	Accept
Female	233	<b>3.22</b>	<b>0.30</b>	-0.0466	0.0666				

Table 4 shows the independent sample t-test for the difference between the responses of male and female teachers regarding factors influencing environmental sustainability education and its effectiveness in promoting healthy wellbeing among teachers in senior secondary schools in Rivers State. The results show that the *t*-statistic value (0.347), the degrees of freedom (df) (398) and the significance value of the test (*p*-value=0.7286). The difference is not considered to be statistically significant at the 5% level of significance. By conventional criteria, the null hypothesis which says that there is no significant difference between the response of male and female teachers regarding factors influencing environmental sustainability education and its effectiveness in promoting healthy wellbeing among teachers in senior secondary schools in Rivers State is accepted.

2. **There is no significant difference between the responses of male and female teachers regarding the level of environmental awareness and knowledge among teachers in senior secondary schools in Rivers State.**

Table 5: Independent Sample t-Test for the significant difference between responses of the male and female teachers regarding the level of environmental awareness and knowledge among teachers in senior secondary schools in Rivers State.

Site(s)	N	Mean	Std. Dev	95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)	Remarks
				Lower	Upper				
Male	167	<b>3.34</b>	<b>0.34</b>			23.32	398	0.0001	Reject
Female	233	<b>2.64</b>	<b>0.26</b>	0.6410	0.7590				



Table 5 contains the results of independent sample t-test for the significant difference between responses of the male and female teachers regarding the level of environmental awareness and knowledge among teachers in senior secondary schools in Rivers State. The results show that the *t*-statistic value (23.32), the degrees of freedom (df) (398) and the significance value of the test (*p*-value=0.0001). The difference is extremely statistically significant at the 5% level of significance. By conventional criteria, the null hypothesis which says that there is no significant difference between the responses of the male and female teachers regarding the level of environmental awareness and knowledge among teachers in senior secondary schools in Rivers State is rejected. This simply means that there is significant difference between the responses of the male and female teachers regarding the level of environmental awareness and knowledge among teachers in senior secondary schools in Rivers State.

**3. There is no significant difference between the responses of male and female teachers regarding the impact of environmental sustainability education on the health and wellbeing of teachers in senior secondary schools in Rivers State.**

Table 6: Independent Sample t-Test for the significant difference between responses of the male and female teachers regarding the impact of Environmental sustainability education on the health and wellbeing of teachers in senior secondary schools in Rivers State

Site(s)	N	Mean	Std. Dev	95% Confidence Interval of the Difference		t	Df	Sig. (2-tailed)	Remarks
				Lower	Upper				
Male	167	<b>3.12</b>	<b>0.27</b>			0.67	398	0.503	Accept
Female	233	<b>3.14</b>	<b>0.31</b>	-0.079	0.037				

Table 6 shows the results of independent sample t-test for the significant difference between responses of the male and female teachers regarding the impact of Environmental sustainability education on the health and wellbeing of teachers in senior secondary schools in Rivers State. The results show that the *t*-statistic value (0.671), the degrees of freedom (df) (398) and the significance value of the test (*p*-value=0.503). The difference is not considered to be statistically significant at the 5% level of significance. By conventional criteria, the null hypothesis which says that there is no significant difference between the responses of the male and female teachers regarding the impact of Environmental sustainability education on the health and wellbeing of teachers in senior secondary schools in Rivers State is accepted. There is significant difference between the responses of the male and female teachers regarding the impact of Environmental sustainability education on the health and wellbeing of teachers in senior secondary schools in Rivers State.

**Discussion of results**

The findings of this study highlight the critical role that several factors play in determining the effectiveness of Environmental Sustainability Education (ESE) in promoting the health and wellbeing of teachers in senior secondary schools in Rivers State, Nigeria. The study identified key factors such as school curricula, teacher training, school environment, community engagement,

and school policies that support environmental sustainability as vital elements for the success of ESE. This is in line with global trends in education, where integrating sustainability into education is essential not only to educate students on environmental issues, but also to promote a healthier and more sustainable school environment for teachers.

The lack of significant gender differences in teachers' perceptions of factors influencing the effectiveness of ESE in promoting healthy well-being suggests that male and female teachers agree on the importance of these factors. This finding is consistent with recent studies that suggest that successful implementation of sustainability-based environmental education often depends on institutional and systemic factors rather than individual gender perspectives. For example, Swarlin's (2023) research highlights the importance of comprehensive training programmes and institutional support for environmental education to be effective, regardless of gender. Furthermore, the study reinforces the need for regular teacher training and curriculum updating, which is in line with the growing body of literature calling for continuing professional development in environmental education to improve the environmental awareness of both male and female teachers as well as students (Kayode, Mzwyanda, Zolani, Babalwa, & Busiswa, 2023).

However, the study also found significant gender differences in teachers' levels of environmental awareness and knowledge, as well as in the impact of environmental sustainability education on teachers' health and well-being. Female teachers reported different levels of environmental knowledge and awareness than their male counterparts. These findings suggest that gender may influence how teachers perceive and understand environmental challenges. For example, Kakungulu's (2024) research found that female teachers often have a stronger bias towards sustainability-related topics that link environmental health to community well-being, whereas male teachers may focus on broader environmental issues. This gendered approach to environmental issues may also be linked to different socialization patterns, with women often being more attuned to the humanitarian and community aspects of sustainability education (Dada, Kris, & Nagel, 2017).

The significant gender differences observed in the perceived impact of environmental sustainability education on teachers' health and well-being also reflect these differences. The mental and physical health benefits of sustainability education, such as improved stress management and job satisfaction, were perceived differently by male and female teachers. This finding is consistent with previous studies such as Nwabueze,(2017)., who identified that environmental education programs can positively impact teachers' well-being by providing a sense of purpose, contributing to better stress management, and improving job satisfaction. However, gender differences in how teachers report these benefits suggest a need for personalized approaches to environmental education that address the common and distinct needs of male and female teachers.

### **Relationship between this study with other recent results**

The findings of the study are consistent with several recent studies that have focused on integrating environmental sustainability into educational systems. For example, research by Stevenson *et al.* (2021) highlights that curriculum, school environment, and teacher training programs are essential

to fostering a culture of sustainability within educational institutions. Furthermore, the findings of this study are consistent with Kayode *et al.* (2023) who noted that community engagement and school policies play a key role in making environmental sustainability education effective and sustainable.

Regarding gender differences in environmental awareness, the findings of this study are consistent with those of Kakonjulu (2024) and Dada, Chris, and Nigel (2017), who argue that male and female teachers view environmental education and sustainability issues differently. These differences may be attributed to different social roles and expectations, which influence how environmental challenges are understood and how education systems address them.

The impact of environmental sustainability education on teachers' well-being is a topic that has been explored in several recent studies. For example, Esteves, Holz, Lopez, and Sandri (2024) found that participation in environmental education programs improved teachers' mental and physical well-being, particularly when the programs established a clear link between environmental sustainability and personal health. However, as this study suggests, gender differences in the perception of these benefits suggest that gender-specific interventions may be necessary to improve the well-being outcomes of home environmental education.

### **conclusion**

This study highlights the critical factors that influence the effectiveness of environmental sustainability education in promoting the health and well-being of teachers in Rivers State, with important implications for policy and practice. It highlights the importance of a holistic approach that includes curriculum, teacher training, school environment, and community engagement, while addressing gender differences in environmental awareness and perceived health benefits. To further enhance the impact of environmental sustainability education, it is essential to consider the gendered experiences and needs of teachers, and ensure that teachers are supported and equipped to contribute to a more sustainable learning environment.

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