

Managing Secondary School Environmental Hazards for Employability in a Competitive Society in Rivers State, Nigeria

Dr. JOY. C. NZOKURUM

Department of Educational Management
Faculty of Education, University of Port Harcourt
joy.nzokurum@uniport.edu.ng

AGALA HUMPHREY OBINNA

Department of Economics
Faculty of Social Sciences, University of Port Harcourt
agalahumphrey@gmail.com

Abstract

The study examined managing secondary school environmental hazards for employability in a competitive society in Rivers State, Nigeria. Three objectives, with corresponding research questions and null hypotheses were used for the study. The design of the study was descriptive survey. The population of the study comprised of 6,893 teachers in 291 public senior secondary schools in Rivers State, with a sample size of 378 drawn from the entire population using Taro Yamane formula. The sampling technique was the proportionate stratified random sampling technique. The instrument for data collection was a questionnaire titled: Managing Secondary School Environmental Hazards for Employability in a Competitive Society Scale (MSSEHECSS). The instrument was validated and Cronbach alpha was used to determine the reliability index of the instrument which yielded 0.81. Mean and Standard Deviation statistics were used to answer three research questions, while z-test statistics was used to test three null hypotheses at 0.05 levels of significance. Findings of the study revealed that managing of secondary school hazards such as chemical, physical and biological hazards guarantees conducive learning environment, which in turn empowers students mentally and physically to be employable in a competitive society. Based on this, it was recommended among others that government and other stakeholders in education should continue to push for the adoption of the identified strategies in managing chemical hazards while also exploring more other ways that can ensure favourable learning environments to empower students to be employable in a competitive society. Also, the principal, teachers and other school member staff should continuously use appropriate administrative strategies in managing school physical hazards as they make conducive learning environments for students.

Keywords: Management, School Environmental Hazards, Employability, Competitive Society

INTRODUCTION

Nigeria is one of the developing countries that is making every effort to provide young people with the opportunity to acquire knowledge, skills, attitudes and values that will enable them to live a meaningful, productive and employable in a competitive society. Having realized the usefulness of education as a tool for national growth and development, the educational philosophy and methodology has been adjusted to match the ideals and challenges of the changing economic and social structure of the present

day society. The Federal Republic of Nigeria (2014) in her National Policy on Education stated that one of its educational philosophies is the acquisition of appropriate skills and the development of mental, physical and social abilities and competencies as equipment for the individual to live in and contribute to the development of the society. Secondary education is the education that is required after primary school and before tertiary education. The broad aims of secondary education in Nigeria are to prepare the individual for useful living within the society and higher education (FRN, 2014). Thus useful living in this context entails self-reliance. In line with these broad educational aims, one of the specific objectives of secondary education in Nigeria is to provide technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development. However, several years after adoption of this laudable initiative, the need to prepare individuals for useful living within the society, seems neglected as majority of Nigerian youths are idle while some are involved in various vices due to unemployment.

The possibility of achieving the aforementioned objectives depends on the structure of the learning environment. The learning environment which includes the human and material components of the school contributes significantly to the attainment of the goals and objectives of secondary education. If the learning environment in the school is safe and comfortable, it will translate to meaningful teaching and learning which will benefit both the stakeholders in the school as well as the nation at large. This is why different educational stakeholders invest heavily in secondary education financially, materially and politically to ensure that personal and general educational objectives are actualized. Despite the importance of secondary education to different educational stakeholders, there are diverse educational practices that take place within the school that threatens the suitability and sustainability of the educational environment for meeting its educational goals and objectives (Adejumo, 2021).

In the course of carrying out instructional, curricular and co-curricular activities that will lead to the attainment of educational goals and objectives, there are practices that are hazardous to the safety of teachers, students and other school users which can harm the goals of education in the school if not properly controlled. These threats are sometimes referred to as school hazards (Adejumo, 2021). Secondary education is experiencing change and innovations from time to time which brings about different educational practices that teachers and students may not be so familiar with. Therefore, in the process of navigating through all of these activities, teachers and students expose themselves to different forms of environmental hazards which makes it impossible to sustain the quality of learning environment established for meeting secondary educational goals and objectives. These practices sometime make the school environment hazardous for all school users either directly or indirectly.

Environmental hazards are events or occurrences arising from interactions between natural, social and technological systems of the environment which are harmful to people and their possessions (Cutter, 2017). They are elements of the physical environment such as the school which are threats to persons in the school caused by forces extraneous to them. In developing countries like Nigeria usually schools are surrounded by places where there is no proper system of disposing waste which is breeding place for germs. Some schools have been surrounded by industries, factories, mills and contaminated lands. Others are located in several cold places where biome fuels, including wood, animal dengue or crop residues that give out carbon, carbon monoxide and other indoor pollutants are burnt.

Environmental hazards are categorized into natural and man-made. Natural hazards result from natural conditions and sometimes products of negative consequences of interactions between man and nature. Man-made hazards are caused by physical, chemical, biological and technological operations of man. They are the usual consequences of high urbanization and industrialization. Some examples of these hazards include earthquakes, hurricanes, tornadoes, tsunamis, land degradation, pollution, desertification, deforestation, wild-land fires, and loss of biodiversity (Kotter, 2003; Amokaye, 2005; Al-Amin, 2013 as cited in Daramola & Odunsi, 2016). The effects of environmental hazards at any location are devastating considering the disaster cases experienced in the world. It render on teachers and students; whipping, fatal injuries causing puncture, broken or complete loss of body parts, burns, eye and hearing impairment, respiratory and gastrointestinal illnesses, fever and headaches from excessive heat in the schools. Such hazards may lead to physical and mental disabilities and without the access to basic health, and other social services, a denial of their rights decreases productivity and chances of being employed in a competitive economy such as Nigeria.

In Nigeria, school environmental hazards resulting from poor and unhealthy activities of teachers and students in school environments include presence of open site dumps, unkempt waste disposal facilities, overgrown lawns, electric generating plants, open drainages, location and conditions of sanitary facility, and indoor cooking for boarding school and many more. The related risks to such unhealthy activities comprise air quality reduction, offensive odour, food poison, breeding of disease vectors, physical injuries etc. Therefore, school environmental hazards can be regarded as any school practice or event that can make any of the school stakeholders in the school vulnerable to danger or loss. School hazards take place in diverse forms since diverse activities are carried out in the school aside teaching and learning. According to Wallace (2014) as cited in Adejumo (2021), school hazards can take different forms among which are chemical, biological and physical.

Chemical hazards are often regarded as health and safety issues because in most cases they can be transmitted by air which makes it difficult to be controlled in the event of a chemical hazard outbreak. Similarly, chemical hazards often exist in the school when teachers and students make use of gases for carrying out experiments in the school's laboratories. The release of toxic chemicals in this process if not properly controlled can pose a health threat to all inhabitants of the school resulting to unstable teaching and learning activities to equip learners for employment in a competitive world. Biological hazards refers to the introduction of organisms or organic matter produced by these organisms into the school environment wether through direct or indirect contact. Biological hazards occur or are often transmitted through viruses, bacteria or fungi which people come in contact with in the course of carrying out their educational activities. These hazards are often infectious and as such can be contacted either directly or indirectly. When biological hazards are allowed in the school, they make the school learning environment to be a health trap to all school stakeholders and this can hinder the execution of important school activities. Lastly, physical hazards are workplace dangers that take place in school as a result of the way and manner in which school materials are handled. This type of hazard can be seen and felt and as such are often perceived as hazards that may harm the human body whether or not there is a physical contact. This type of hazard can affect the substantiality of the school environment because the disorganization created will continue to pose a threat to school users until orderliness in the handling of these resources is restored.

The secondary school environment like any other environment where there is evidence of environmental hazards, risk prevention and/or management is pertinent as to guide against environmental disasters. It is based on this background that this paper examined “managing secondary school environmental hazards for employability in a competitive society in Rivers State.

Statement of Problem

Children who also are students require a great deal of care, love and stimulation from parents, families, care givers and school which is the best and safest of environment to survive and develop their full potential for employability since they are young. Parents and teachers as adults have the moral responsibility to protect them from any danger whether at home or at the school. In Nigeria, millions of children as students and adults as school staff spend a significant portion of their time and days in school buildings. Many of these buildings are old, in poor condition, and may contain environmental conditions that pose increased risks to the health of students and staff. It has been observed by well-meaning individuals in Rivers State that there is a growing level of environmental threat to teachers, students and other school users arising from the way the school is being managed in terms of educational resources provided for teachers and students as well as the level to which students and teachers and other school users are exposed to life threatening conditions arising from indiscriminate, illegal crude oil refining process resulting in black soot, dumping of renewable and non-renewable waste products, land degradation, pollution, desertification, deforestation, wild-land fires, and loss of biodiversity.

This has resulted in rising cases of burns, eye and hearing impairment, respiratory and gastrointestinal illnesses, fever and headaches from excessive heat in the schools, physical and mental disabilities and without the access to basic health, fatigue among teachers and students, absenteeism from school, disease outbreak and spread of communicable and non-communicable diseases and other social services. This salient threat to school activities has been left unattended to over a long period of time. Secondary education as previously stated no doubt plays a vital role in the growth and development of the society. However, secondary educational goals and objectives such equipping students to be useful and employable will remain far from being achieved if the school environment is not ideal for teaching and learning activities. It then appears that school administrators in these schools have no solution to the ways of managing some of these hazards which has contributed to rising cases of ill health among teachers and students and has lead to life threatening conditions since it has been left unchecked. Hence, this situation and many more prompted this study.

Aim and Objectives of the Study

The aim of the study was to examine managing secondary school environmental hazards for employability in a competitive society in Rivers State. Specifically, the objectives of the study sought to:

1. identify ways chemical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.
2. find out ways physical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

3. determine ways biological hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

Research Questions

The following research questions guided the study.

1. In what ways can chemical hazards as a form of secondary school environmental hazards be managed for employability in competitive society in Rivers State?
2. In what ways can physical hazards as a form of secondary school environmental hazards be managed for employability in competitive society in Rivers State?
3. In what ways can biological hazards as a form of secondary school environmental hazards be managed for employability in competitive society in Rivers State?

Hypotheses

The following corresponding null hypotheses were tested at 0.05 level of significance:

1. There is no significant difference between the mean ratings of male and female teachers on ways chemical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.
2. There is no significant difference between the mean ratings of female and male teachers on ways physical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.
3. There is no significant difference between the mean ratings of male and female teachers on ways biological hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

Conceptual Clarifications

Management

Management according to Oluwuo (2021) deals with the coordination of human and material resources for the achievement of organizational goals. It also deals with the use of people to achieve results. Goals are at the heart of management. Achievement of goals in management has to do with effectiveness. Management is also the process of planning, organizing, directing, controlling resources to achieve organizational goals. The responsibilities of managers in an organization are summarized by 5 Ms namely: Men, machines, methods, materials and money. Also the task areas of educational management are: finance, curriculum and instructions, physical facilities, student personnel administration, staff personnel administration and school-community relationships (Oluwuo, 2021). Therefore, management is therefore key to the achievement of organizational goals such as reducing school environmental hazards in a way to create conducive atmosphere for teaching and learning in order to equip students with employability skills to survive in a competitive society.

School Environmental Hazards

Environment as defined in the Oxford Advanced Learner's Dictionary implies condition, circumstance affecting a person's life (positively or negatively) as the aggregate of external conditions and influences affecting life and development of either a man or an animals or an organism. It includes atmosphere and the air we breathe. The water we drink and the land/soil in which crops are grown. Hazard means, things that can be dangerous or cause damage. According to Sofoluwe (1971) as cited in Abdulraheem (2019), hazard is regarded as a danger or a risk, which may pose a serious threat to life. Anything that constitutes a problem within the environment can be referred to as hazard. For instance if a few drop of kerosene is mixed with water and if man take it. Consequently, school environmental hazard can be defined as any materials or substance introduced into the school environment that cause damage to staff, students and all thing present there. Hayford (2014) asserts that school environmental hazard is any condition in a school that can cause temporary and permanent injury to the health of the teachers, students or any other stakeholder in the school organization. This implies that if a hazardous condition is not properly managed, it can lead to either temporary or permanent damage to the people in the school environment or other essential resources in the school. Therefore, school environmental hazard is a danger with either a short term or long-term consequence on staff and students or other resources in the school environment.

Employability

The concept of employability continues to be applied within a range of different contexts and to both those in work and those seeking work. Accordingly, while it is simple enough to assign 'employability' a straightforward dictionary definition, such as 'the character or quality of being employable', arriving at a working definition is a far more complex process. Perhaps understandably, employers have tended to view employability as primarily a characteristic of the individual. The Confederation of British Industry (CBI) (2012) as cited in Akuagwu (2018) defined employability as the possession by an individual of the qualities and competencies required to meet the changing needs of employers and customers and thereby help to realize his or her aspirations and potential in work. Employability is the capability to move into and within labour markets and to realize potential through sustainable and accessible employment. For the individual, employability depends on: the knowledge and skills they possess, and their attitudes; the way personal attributes are presented in the labour market; the environmental and social context within which work is sought; and the economic context within which work is sought (Pollard, 2008 in Akuagwu, 2018). Hence, this covers both unemployed people looking for work and employed people seeking alternative jobs or promotion. Employability thus, involves the proficiency to move independently within the competitive labour market to realize potential through sustainable employment. For the individual, employability depends on the knowledge, skills and attitudes they have acquired, the way they use those assets and present them to employers and the context (e.g. personal circumstances and labour market environment) within which they seek work.

Competitive Society

The term competitive is used to described situations or activities in which individuals or firms compete with each other. The term is derived from the word "competition", meaning the struggle for possession of rewards which are in limited supply- money,

goods, status, power, love and many more. Consequently, a competitive society is a society where there is a rivalry between individuals (or groups), and it arises whenever two or more parties in a geographical area strive for something that is limited, scarce or that all cannot be obtain easily. However, the economic definition of competitive society is the struggle for existence and means of life. It is an impersonal, unconscious, continuous scuffle and tussle between individuals or groups in an economy for satisfaction due to scarce resources.

METHODOLOGY

This study employed a descriptive survey design. The study sought the opinion of teachers on managing secondary school environmental hazards for employability in a competitive society in Rivers State. The population consisted of all the 6,893 (i.e. 3,490 male and 3,403 female) teaching staff in 291 public senior secondary schools in Rivers State. (Sources: Planning, Research and Statistics Department, Rivers State, 2022). The sample size for this study was three hundred and seventy-eight (378) drawn from the entire population using Taro Yamane formula. The sampling technique for the study was the proportionate stratified random sampling technique. This ensured that all members of the population are given equal opportunity of being selected. The research instrument was a questionnaire titled: Managing Secondary School Environmental Hazards for Employability in a Competitive Society Scale (MSSEHECSS) was used for this study. The instrument was structured with a four point modified Likert rating scale of Strongly agree (SA), Agree (A), Disagree (D) and Strongly disagree (SD) to elicit information from the respondents, and was validated. Using Cronbach Alpha test, the reliability of the instrument yielded an index of 0.81. Mean scores and standard deviation were used to answer the research questions, while z-test was used to test the hypotheses at 0.05 alpha significant level.

RESULTS AND ANALYSIS

As part of data collection efforts, the researcher designed and distributed 378 copies of the questionnaire to the respondents. Three hundred and thirty-one (351) copies were retrieved and found suitable for analysis resulting in 92% response rate.

Research Question One: In what ways can chemical hazards as a form of secondary school environmental hazards be managed for employability in competitive society in Rivers State?

Table 1: Weighted Mean and Standard Deviation Scores of Teachers on Ways Chemical Hazards as a Form of Secondary School Environmental Hazards can be Managed for Employability in Competitive Society in Rivers State.

S/N	Items	Male = 197		Female = 154		Mean set (x ₁ x ₂)	Remark
		\bar{X}_1	SD ₁	\bar{X}_2	SD ₂		
1	Conduct annual chemical inventories and prohibit any unauthorized, toxic or hazardous chemicals from being brought into the school.	3.00	1.22	2.73	1.14	2.87	Agreed
2	Store toxic or hazardous chemicals in appropriate containers, separated by hazard category in a ventilated, fire resistant, and locked area or cabinet.	2.93	1.20	2.82	1.16	2.88	Agreed
3	Label containers with the name of the material and	3.03	1.24	2.91	1.19	2.97	Agreed

	date it entered the school, and ensure that Safe Data Sheets (SDSs) for each product are in a binder readily displayed near the chemical storage area.						
4	Conduct regular cleanouts of chemicals that are unnecessary, outdated, and pose a health, safety or environmental risk.	2.73	1.22	3.00	1.14	2.87	Agreed
5	Ensure proper training of staff involved with chemical management and training of students before using toxic or hazardous chemicals.	3.03	1.24	2.91	1.19	2.97	Agreed
	Average Mean/ Standard Deviation	2.94	1.22	2.87	1.16	2.91	Agreed

Data on Table 1 show that all items (1-5) had weighted mean scores above the criterion mean of 2.50 and were adjudged on the ways chemical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State. In summary, with an aggregate weighted mean of 2.91 which is above the criterion mean of 2.50, the respondents agreed that the ways chemical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State include: conduction of annual chemical inventories and prohibition of any unauthorized, toxic or hazardous chemicals from being brought into the school; storing of toxic or hazardous chemicals in appropriate containers, separated by hazard category in a ventilated, fire resistant, and locked area or cabinet, labeling of containers with the name of the material and date it entered the school, and ensure that Safe Data Sheets (SDSs) for each product are in a binder readily displayed near the chemical storage area, conducting of regular cleanouts of chemicals that are unnecessary, outdated, and pose a health, safety or environmental risk, and ensure proper training of staff involved with chemical management and training of students before using toxic or hazardous chemicals.

Research Question Two: In what ways can physical hazards as a form of secondary school environmental hazards be managed for employability in competitive society in Rivers State?

Table 2: Weighted Mean and Standard Deviation Scores of Teachers on Ways Physical Hazards as a Form of Secondary School Environmental Hazards can be Managed for Employability in Competitive Society in Rivers State.

S/N	Items	Male = 197		Female = 154		Mean set (x ₁ x ₂)	Remark
		\bar{X}_1	SD ₁	\bar{X}_2	SD ₂		
6	Locate passenger pickup and drop off areas away from a school's air intake supply and classroom windows.	3.00	1.22	3.03	1.14	3.02	Agreed
7	Adequate plant planning in the school to reduce exposure to physical hazard.	3.13	1.20	3.12	1.16	3.13	Agreed
8	Establish anti-idling zones for all vehicles found around the school.	2.93	1.20	2.92	1.16	2.93	Agreed
9	Insulation of school infrastructures to reduce extreme temperature which can cause physical hazard.	3.03	1.24	3.05	1.21	3.04	Agreed
10	Never dispose of hazardous substances dumping them into storm drains.	3.01	1.32	3.04	1.34	3.03	Agreed
	Average Mean/ Standard Deviation	3.02	1.24	3.03	1.20	3.03	Agreed

Data on Table 2 show that all items (6-10) had weighted mean scores above the criterion mean of 2.50 and were adjudged on the ways physical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State. In summary, with an aggregate weighted mean of

3.03 which is above the criterion mean of 2.50, the respondents agreed that the ways physical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State includelocating passenger pickup and drop off areas away from a school’s air intake supply and classroom windows; adequate plant planning in the school to reduce exposure to physical hazard; establish anti-idling zones for all vehicles found around the school; insulation of school infrastructures to reduce extreme temperature which can cause physical hazard; and never dispose of hazardous substances dumping them into storm drains.

Research Question Three: In what ways can biological hazards as a form of secondary school environmental hazards be managed for employability in competitive society in Rivers State?

Table 3: Weighted Mean and Standard Deviation Scores of Teachers on Ways Biological Hazards as a Form of Secondary School Environmental Hazards can be Managed for Employability in Competitive Society in Rivers State.

S/N	Items	Male = 197		Female = 154		Mean set (x ₁ x ₂)	Remark
		\bar{X}_1	SD ₁	\bar{X}_2	SD ₂		
11	Plant more trees and vegetation (low pollination varieties) on school grounds to create fresh air for members of the school.	3.45	1.16	3.53	1.14	3.02	Agreed
12	Limit physical exertion outdoors during days with high heat or unhealthy air conditions well-being of members of the school.	3.33	1.14	3.42	1.15	3.13	Agreed
13	Compulsory hand washing for all school members to controlling biological hazards like viruses and bacteria.	3.73	1.13	3.92	1.13	2.93	Agreed
14	Maintain and sanitize water faucet screens/aerators regularly to avoid members of the school getting infected with virus.	3.43	1.15	3.65	1.11	3.04	Agreed
15	Provision of biological hazard rubbish bags at all strategic points in the school is a way of controlling biological hazard	3.71	1.13	3.04	1.10	3.03	Agreed
Average Mean/ Standard Deviation		3.53	1.14	3.51	1.13	3.52	Agreed

Data on Table 3 show that all items (11-15) had weighted mean scores above the criterion mean of 2.50 and were adjudged on the ways biological hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State. In summary, with an aggregate weighted mean of 3.52 which is above the criterion mean of 2.50, the respondents agreed that the ways biological hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State include: planting of more trees and vegetation (low pollination varieties) on school grounds to create fresh air for members of the school; limitation of physical exertion outdoors during days with high heat or unhealthy air conditions well being of members of the school; compulsory hand washing for all school members to controlling biological hazards like viruses and bacteria; maintaining and sanitizing water faucet screens/aerators regularly to avoid members of the school getting infected with virus; and provision of biological hazard rubbish bags at all strategic points in the school is a way of controlling biological hazard.

Test of Hypotheses

Ho₁: There is no significant difference between the mean ratings of male and female teachers on ways chemical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

Table 4: z-test Analysis on the difference between the mean ratings of male and female teachers on ways chemical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

Variable	N	\bar{X}	SD	df	z-cal	z-crit.	Remarks
Male	197	2.94	1.22	349	0.54	±1.96	Significant Accept Ho ₁
Female	154	2.87	1.16				(z-cal. < z-crit.)

Table 4 indicates that male teachers have mean and standard deviation scores of 2.94 and 1.22, while female teachers have mean and standard deviation scores of 2.87 and 1.16 respectively. With a level of flexibility (degree of freedom) of 349 at an alpha noteworthy level of 0.05; the figured z-estimation of 0.54 is less than the z-critical of 1.96. Along these lines the null hypothesis is accepted. By implication, there is significant difference between the mean ratings of male and female teachers on ways chemical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

Ho₂: There is no significant difference between the mean ratings of female and male teachers on ways physical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

Table 5: z-test Analysis on the difference between the mean ratings of female and male teachers on ways physical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

Variable	N	\bar{X}	SD	df	z-cal	z-crit.	Remarks
Male	197	3.02	1.24	349	-0.07	±1.96	Significant Accept Ho ₂
Female	154	3.03	1.20				(z-cal. < z-crit.)

Table 5 shows that male teachers have mean and standard deviation scores of 3.02 and 1.24, while female teachers have mean and standard deviation scores of 2.54 and 0.39 respectively. With a level of flexibility (degree of freedom) of 349 at an alpha noteworthy level of 0.05; the figured z-estimation of -0.07 is less than the z-critical of -1.96. Along these lines the null hypothesis is accepted. By implication, there is no significant difference between the mean ratings of female and male teachers on ways physical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

Ho₃: There is no significant difference between the mean ratings of male and female teachers on ways biological hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

Table 6: z-test Analysis on the difference between the mean ratings of male and female teachers on ways biological hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

Variable	N	\bar{X}	SD	df	z-cal	z-crit.	Remarks
Male	197	3.53	1.14	349	0.16	±1.96	Significant Accept Ho ₃
Female	154	3.51	1.13				(z-cal.<z-crit.)

Table 6 indicates that male teachers have mean and standard deviation scores of 3.53 and 1.14, while female teachers have mean and standard deviation scores of 3.51 and 1.13 respectively. With a level of flexibility (degree of freedom) of 349 at an alpha noteworthy level of 0.05; the figured z-estimation of 0.16 is less than the z-critical of 1.96. Along these lines the null hypothesis is accepted. By implication, there is significant difference between the mean ratings of male and female teachers on ways biological hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State.

DISCUSSION OF FINDINGS

The first finding of the study revealed that the ways chemical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State include: conduction of annual chemical inventories and prohibition of any unauthorized, toxic or hazardous chemicals from being brought into the school; storing of toxic or hazardous chemicals in appropriate containers, separated by hazard category in a ventilated, fire resistant, and locked area or cabinet, labeling of containers with the name of the material and date it entered the school, and ensure that Safe Data Sheets (SDSs) for each product are in a binder readily displayed near the chemical storage area, conducting of regular cleanouts of chemicals that are unnecessary, outdated, and pose a health, safety or environmental risk, and ensure proper training of staff involved with chemical management and training of students before using toxic or hazardous chemicals. Similarly, for the hypothesis tested established that there is significant difference between the mean ratings of male and female teachers on ways chemical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State. These findings are tandem with Mehrifar, et al. (2016), Alyammahi (2015), Olugbenga and Thomas (2014) whose comments and research finding present information on the ways for managing chemical hazards in schools. Explanation for the trend in the findings may be in the fact that the respondent themselves were teachers who are actually involved in the use of chemicals in laboratory in schools and therefore in a better position to make response, appropriately. These findings imply that effective management of chemical hazards presents favourable learning environment which promote quality students output for employability in competitive society.

The second finding showed that the ways physical hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State include: locating passenger pickup and drop off areas away from a school's air intake supply and classroom windows; adequate plant planning in the school to reduce exposure to physical hazard; establish anti-idling zones for all vehicles found around the school; insulation of school infrastructures to reduce extreme temperature which can cause physical hazard; and never dispose of hazardous substances dumping them into storm drains. Additionally, for the corresponding hypothesis tested revealed that there is no significant difference between the mean ratings of female and male teachers on ways physical hazards as a form of secondary

school environmental hazards can be managed for employability in competitive society in Rivers State. These findings are in line with Arop, et al (2018), Gbadago, et al (2017), Bakir, et al (2014) who found out in their studies that the physical hazards are managed in the ways identified above. A possible explanation for this may be in fact that quite very recently, schools have had to take care of managing physical hazards in schools. These findings imply that schools with conducive learning environment are prone to turn out students who are properly equip with relevant knowledge and skills for employability in competitive society, because physical hazards are properly managed in the schools.

Lastly, the third finding of the study revealed that the ways biological hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State include: planting of more trees and vegetation (low pollination varieties) on school grounds to create fresh air for members of the school; limitation of physical exertion outdoors during days with high heat or unhealthy air conditions well being of members of the school; compulsory hand washing for all school members to controlling biological hazards like viruses and bacteria; maintaining and sanitizing water faucet screens/aerators regularly to avoid members of the school getting infected with virus; and provision of biological hazard rubbish bags at all strategic points in the school is a way of controlling biological hazard. In addition, for the corresponding hypothesis tested, it was ascertained that there is significant difference between the mean ratings of male and female teachers on ways biological hazards as a form of secondary school environmental hazards can be managed for employability in competitive society in Rivers State. These findings corroborate Osuafor and Ezeobi (2017), Oluoch, et al (2017) and Adams and Azuibike (2014), who empirical and scholarly contributions to knowledge attest to these strategies. These may further be explained in the fact that school leaders and other members have come to the realization that managing the biological environments of their school remains their sole responsibility for students learning. These imply that appropriate management of the school biological environment is inevitable for favourable environment for students learning in order to be empowered to stand the chance to be employable in competitive economy.

CONCLUSION

Based on the findings of the study, it is concluded that proper managing of hazards such as chemical, physical and biological hazards guarantees conducive learning environment in secondary school in Rivers State, which empowers students mentally and physically to be employable in a competitive society.

Recommendation

1. Government and other stake holders in education should continue to push for the adoption of the identified strategies in managing chemical hazards while also exploring more other ways that can ensure favourable learning environments which will empower students to be employable in a competitive society.
2. The principal, teachers and other school member staff should continuously use appropriate administrative strategies in managing school physical hazards as they make conducive learning environments for students.

3. Teachers in collaboration with students and other school users should continue to make use of existing approaches as identified for managing biological hazards in schools, and at the same time explore alternative approaches for doing so as society in dynamic in order to ensure continuous favourable learning environment capable of turning out quality student.

REFERENCES

1. Abdulraheem, M. I. (2019). Sources of environmental hazards effects and control. *Asia Pacific Journal of Energy and Environment*, 6(2), 77-82
2. Adams, A. & Azubuike, A. S. (2014). Evaluation of safety practices in Biology laboratories in selected secondary schools within Gumel Emirate, Jigawa State, Nigeria: *Creative Education*, 5, 1274-1280
3. Adejumo, G. A. (2021). *Managing school hazards for sustainable learning environment in secondary schools in Rivers State*. Unpublished M.Ed. Dissertation, Department of Educational Management, University of Port Harcourt, Nigeria.
4. Akuagwu, M. A. (2018). *Institutional strategies for empowering students for employability in secondary schools in Rivers State, Nigeria*. Unpublished M.Ed. Dissertation, Department of Educational Management, University of Port Harcourt, Nigeria.
5. Alyammahi, A. (2015). *The current status of safety in high school chemical laboratories in Kentucky*. <https://encompass.eku.edu/cgi/viewcontent.cgi?article=1329&context=etd>
6. Arop, F. O., Owan, V. J. & Ekpang, M. A. (2018). School hazards management and teachers' job effectiveness in secondary schools in Ikom Local Government Area, Cross River State, Nigeria. *International Journal of Education and Evaluation*, 4(9), 38-49
7. Bakır, B., Babaviğit, M. A., Tekbaş, O. F., Oğur, R., Kılıç, A. & Ulus, S. (2014). Evaluation of some physical hazards which may affect health in primary schools: *Turkish Archive of Pediatrics*, 49(3), 217-223.
8. Cutter, S. L. (2017). *American hazardscapes: The regionalization of hazards and disasters*. Joseph Henry Press.
9. Daramola, O., & Odunsi, O. (2016). Assessing students' awareness of environmental hazards and risks in public tertiary educational institutions in Oyo State, Nigeria. *Economic and Environmental Studies*, 16 (4), 655-672.
10. Federal Republic of Nigeria (2014). *National policy on education*. NERDC
11. Gbadago, P., Amedome, S. N. & Honyenuga, B. Q. (2017). The impact of occupational health and safety measures on employee performance at the South Tongu District Hospital: *Global Journal of Medical Research*, 17(5), 13-19.
12. Hayford, D. M. (2014). *Survey on ergonomic and occupational health hazards and safety of teachers and researchers in state academic institution in Ghana case study of Mampong Municipality*. B. Ed. Project of the Department of Environmental Health and Sanitation, Faculty of Science and Environmental Education, University of Education, Winneba-Mampong, Ghana.
13. Mehriifar, Y., Eskandarnia, A., Pirami, H., & Mardanparvar, H. (2016). Assessment of awareness and comprehension of chemical hazard symbols among chemistry students: *Journal of Occupational Health and Epidemiology*, 5(1), 20-25.
14. Olugbenga, A. J., & Thomas, O. O. (2014). Analysis of hazard and safety in science laboratories in Ekiti State, Nigeria: *British Journal of Education, Society and Behavioural Science*, 4(3), 403-414.
15. Oluoch, I., Njogu, P. & Ndeda, J. O. H. (2017). Effects of occupational safety and health hazards' exposure on work environment in the water service industry within Kisumu County-Kenya: *Journal of Environmental Science, Toxicology and Food Technology*, 11(5), 46-51.
16. Oluwuo, S. O. (2021). *Management of innovation education for the attainment of sustainable development goals*. A Keynote Address Presented at the Conference Organized by University of Port Harcourt Chapter of Nigerian Association for Educational Administration and Planning (NAEAP) Held at Ebitimi Banilgo Hall Abuja Unipark, University of Port Harcourt from Monday 17th to Thursday 20th May, 2021.
17. Osuafor, A. M. & Ezeobi, G. O. (2017). Extent of Biology laboratory organization and management in senior secondary schools in Awka South Local Government Area: *UNIZIK Journal of STM Education*, 2(1), 100-111.