

**SCHOOL MOTIVATIONAL FACTORS RESPONSIBLE FOR FEMALE STUDENTS' RETENTION IN TECHNOLOGY EDUCATION PROGRAMMES IN TERTIARY INSTITUTIONS IN RIVERS STATE, NIGERIA**

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**ABSTRACT**

This study examined school motivational factors responsible for female students' retention in Technology Education programmes in tertiary institutions in Rivers State. The study employed descriptive research survey design. The entire population of 179 respondents that comprised 121 Technology Educators and 58 female students from three tertiary institutions offering Technology Education in Rivers State was used for the study. One research question was answered and one hypothesis tested at 0.05 level of significance. For data collection, a structured questionnaire which was designed after Likert-5-point rating scale was used. The instrument was validated by three experts and reliability coefficient of 0.86 was established for the instrument using Pearson Product Moment Correlation (PPMC) coefficient reliability method. Mean and standard deviation were used in the analysis of research question while t-test was used to test the hypothesis. The result of the study revealed that affordable school fees, provision of secured accommodation, provision of child care facilities and conducive learning environment among others are some school factors that motivate female retention in Technology Education programmes in tertiary institutions in Rivers State. Based on the findings of the study, it was recommended among others that there should be adequate security in hostels and classroom, automatic employment for female folks, preferential admission for females as these will contribute to female retention in Technology Education programmes in tertiary institutions in Rivers State

**Key Words:** Motivational factors, Female, Retention, Technology Education.

**1. INTRODUCTION**

Education is a right to which every child (male and female) must have access because it is the most potent and valuable instrument for socio-economic development. It is a vital tool for national development and integration. According to Igbiniedion and Ojeaga (2012), education is a veritable means of progress for nations and individuals. Also, Okebukola (2013) opined that education is a process of updating the knowledge and skills of the individual that will be useful to himself or herself and to the community. Education plays an important role in the socio-economic development of a nation.

Despite the improved access to education "Education For All" (EFA), canvassed worldwide, female participation in education in most developing countries including Nigeria is still

considered to be characterized by disparities. In this regard, World Bank (2012) reported that girls continue to constitute the majority of children out-of-school. The report further revealed that girls represent about 55 per cent of all children who are out of school worldwide. UNESCO (2015) reported that in southern part of Nigeria (Rivers and Benin), for every 100 boys that are out-of-school, 127 girls are also out-of-school. In Sub-Saharan Africa, only very few girls are enrolled in technical and vocational education and training at the post primary level these unarguably have effect on the level of enrollment and retention of females generally in tertiary institution specifically in Technology Education programmes (Okwelle & Agwi, 2018).

Technology Education leads participants to the acquisition of the basic skills and knowledge required for employment in a trade or particular occupation. According to Butterfield as cited in Okoye and Okwelle (2014), Technology Education is any education program with the responsibility to orient people into skills acquisition, and as well as to teach them the attitude and knowledge necessary for the appropriate utilization of such skills. Technology Education consists of relevant work-oriented learning experiences and may occur in educational institutions and/ or the workplace. Technology Education leads to improved quality of life since it helps individuals to become economically productive and thus escape poverty and marginalization. When individuals are equipped with skills, they become entrepreneurs, employable and informed citizens thereby contributing to economic development of a nation (Anaele, Isiorhovoja, Dele & Asoluka, 2014). Technology Education has been widely recognized for furnishing skills required to improve productivity and access to employment opportunities. UNESCO/ILO (2002) report recommended that Technology Education programmes should be prioritized, developed and implemented all levels of education.

However, Rodgers and Boyer (2016) found that emphasis on access to Technology Education varies significantly around the world with European countries recording relatively high proportions of vocational courses in secondary schools. In contrast, they noted that most low-income countries had vocational proportions below 4% at secondary school. In addition, the majority of the countries had a lower proportion of female students retained in Technology Education programmes in tertiary institutions compared with their male counterparts. Female underrepresentation in vocational schools is therefore an issue both in developed and developing countries, Kenya, Zambia and Nigeria inclusive (Margaret & Purity, 2017). These inequalities can be linked to unequal access to training opportunities. For instance, a study conducted in Nigeria found out that female participation in Technical and Vocational Education Training and Science, Engineering and Technology (SET) show that females are still underrepresented and occupy the middle and lower status, in spite of the recent steady progression from this status over time (Udeani, & Ejikeme, 2011).

In regard to female motivation in retention in Technology Education, Mau (2003) found that female's participation in Technology Education is affected by the tougher institutional and cultural barriers they face, unlike their male counterparts. Apart from cultural barriers, there are other factors that have been found to influence the motivation of female retention in Technology Education to include potential employment, attractiveness on campus, parents, secondary school teachers, and tuition fees, peer influence and so on. Female retention in Technology Education is

the successful completion of female students' academic goals of degree attainment in Technology Education (Levitz, 2011).

Furthermore, females face more difficulties accessing both secondary education and Technology Education programmes in tertiary institutions compared with males which limit retention level among the female folks (Sonja, 2016). The low retention of females in Technology Education at higher level of learning may be attributed to their small percentage enrolment at secondary school level in many developing countries (Atchoarena & Delluc, 2012). This assertion is buttressed by the African Economic Outlook (2010) report which found that countries where female accounted for fewer than 15% of the enrolment in Technology Education colleges, such as Eritrea, Nigeria, Ethiopia, Namibia, Malawi and Uganda had female Technology Education retention of less than 5% of the overall tertiary institution enrolment.

From the above, it could be deduced that at a global level, countries with high income embrace Technology Education more than those of low income with female actively participating in Technology Education programmes. This is apparently visible at the primary and secondary school levels where low numbers of girls are found in Science, Technology, Engineering and Mathematics (STEM) related subjects. Today, the retention of female in Technology Education increases as it is being motivated by factors such as employment opportunity, ability to be self-reliant, parental orientation, societal influence among others (Oyamo & Amoth, 2014).

## **2. STATEMENT OF THE PROBLEM**

The school being the cradle of a child's development provides the child with emotional and educational support but the increase in the rate of low retention of female in Technology Education is steadily overwhelming in Africa (Owano, 2016). Despite successive Nigerian governments' efforts directed at improving Technology Education at all levels to make it attractive and sellable, gender gap still exists (Ayomike, 2014). According to Edu and Edu (2012), traditional and western educational systems in Nigeria have not encouraged or make provision for equal opportunities for female to enter into and fully participate in vocational and technical fields including engineering.

This is because engineering and related course is viewed as elite field dominated by males thus females are uncertain about their future in engineering sectors, though female engineers have contributed immensely to the growth of the society, yet female retention in Technology Education is still dwindling (Okwelle & Alalibo, 2017). Also in Nigeria, the availability and accessibility to accurate information about Technology Education, its benefits and challenges are lacking in most schools, thus students are ill-equipped to make the right career choice. As a result, the male folks have dominated Nigerian schools from the primary to tertiary level more especially in Technology Education and allied disciplines. Apart from the issue of enrolment of female students as dealt by many researchers, literature is scarce on the retention of the very few females who have enrolled into the technology education programmes in higher institutions. Hence, this study set out to determine school motivational factors responsible for female retention in Technology Education in tertiary institutions in Rivers State.

### Research Question

1. What are the factors that could motivate female retention in Technology Education in tertiary institutions in Rivers State?

### Hypothesis

One null hypothesis was formulated and tested to guide this study at 0.05 level of significance;

1. There is no significant difference in the mean ratings of Technology Educators and female students on school factors that motivate female retention in Technology Education in tertiary institutions in Rivers State.

### 3. METHOD

The study adopted the descriptive research survey design. The study was carried out in tertiary institutions in Rivers State offering Technology Education which include Rivers State University, Ignatius Ajuru University of Education and Federal College of Education (Technical), Omoku. The population of the study comprised 179 Technology Educators and female students. As at the time of this study, the population of Technology Educators per institution was as follows: Rivers State University (RSU = 23), Ignatius Ajuru University of Education (IAUOE = 51) and Federal College of Education, Technical (FCET = 47), Omoku (Source: Institutional Admission Office, 2018). The entire population of 179 (121 Technology Educators and 58 female students) were used for the study. No sampling was done due to the small size of the population which is considered manageable.

The instrument for the data collection was a self-constructed questionnaire titled “School Motivating Factors for Female Students Retention Questionnaire” (SMFFSRQ) which was designed in the pattern of Likert-5-point rating scale of Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD) with numerical values of 5, 4, 3, 2 and 1 respectively. The instrument was validated by two experts in Technology Education from Rivers State University, Port Harcourt. The reliability of the instrument (SMFFSRQ) was established through test-retest method. Copies of the instrument were administered to eight Technology Educators and 13 female students from Bayelsa State. After an interval of two weeks, the same instrument was re-administered to the same group. The initial (test) and the re-tested scores of the group were correlated using Pearson Product Moment Correlation (PPMC) method to obtain a reliability coefficient of 0.86. The only research question was answered with mean and standard deviation while hypothesis was tested with t-test statistics. Mean values equal to or greater than 3.50 were agreed otherwise, disagreed. Standard deviation value close or wide apart was used to determine homogeneity in the perception of the respondents. Also, if the calculated value of  $t$  ( $t_{cal}$ ) is less than the critical value of  $t$  ( $t_{crit}$ ), the null hypothesis was accepted otherwise, rejected.

### 4. RESULTS

#### Research Question 1

What are the school factors that could motivate female retention in Technology Education in tertiary institutions in Rivers State?

Data gathered to provide answer to the research question are analyzed and presented in Table 1.

**Table 1: Mean Response of the Respondents on School Motivational Factors for Female Retention**

S/N	School Factors	Technology Educators			Female Students		
		$\bar{X}$	S.D	Decision	$\bar{X}$	S.D	Decision
1	Affordable school fees	3.80	0.91	Agree	3.94	1.30	Agree
2	Availability of academic counsellor /adviser	4.03	0.82	Agree	3.58	0.62	Agree
3	Adequate learning facilities	3.59	0.76	Agree	3.52	1.03	Agree
4	Adequate security for females in hostels	3.89	1.06	Agree	4.43	0.80	Agree
5	Technology Education courses are always practical	4.13	0.59	Agree	3.71	1.14	Agree
6	Adequacy of facilities for practical	4.21	1.01	Agree	3.81	1.03	Agree
7	Adequate security in the classes	3.87	1.14	Agree	3.57	0.93	Agree
8	Conducive learning environment	4.19	1.02	Agree	4.08	1.02	Agree
9	Well-equipped libraries	4.21	0.67	Agree	3.63	0.81	Agree
10	Availability of qualified instructors	3.75	0.82	Agree	3.76	0.73	Agree
11	Automatic employment to girls by the school or government	3.90	0.58	Agree	3.79	1.30	Agree
12	Preferential admission process to the female candidates	3.53	0.84	Agree	4.14	1.06	Agree
13	Readmitting female students that has dropout	4.08	1.03	Agree	3.67	0.64	Agree
14	Given special award to best female students	4.11	0.73	Agree	4.38	0.86	Agree

15	Presence of female instructors in the schools as role models	4.40	1.08	Agree	4.24	1.22	Agree
16	Gender biased curriculum material	3.72	0.65	Agree	3.92	1.02	Agree
17	Provision of child care facilities for nursing mothers	4.13	1.05	Agree	3.64	0.79	Agree
18	Cordial Lecturer-student interaction	3.91	0.65	Agree	3.56	0.76	Agree
<b>Average Mean/SD</b>		<b>3.97</b>	<b>0.86</b>	<b>Agree</b>	<b>3.85</b>	<b>0.95</b>	<b>Agree</b>

The result in Table 1 shows that all the items with mean ratings above 3.50 mean cut off value were considered by technology educators and female students as school factors that motivate female retention in Technology Education programmes in tertiary institutions in Rivers State. Furthermore, the standard deviation ranging between 0.58 to 1.14 for technology educators and 0.62 to 1.30 for female students, imply that the respondents were homogenous in their responses.

### Hypothesis

**H<sub>01</sub>:** There is no significant difference in the mean rating of Technology Educators and female students on school factors that motivate female retention in Technology Education in tertiary institutions in Rivers State.

**Table 4.5: t-Test Analysis on School Motivational Factors for Female Retention in Technology Education**

Group	Mean	SD	N	Df	A	tcal	Tcrit	Decision
Technology Educators	3.97	0.86	121	177	0.05	0.809	1.960	Accepted
Female Students	3.85	0.95	58					

Data in Table 2 indicated that since the calculated value of t (tcal = 0.809) is less than the critical value of t (tcrit = 1.960), the null hypothesis was accepted. This implies that there is no significant difference in the mean ratings of Technology Educators and female students on school factors that motivate female retention in Technology Education tertiary institutions in Rivers State.

## 5. DISCUSSION

The results from Table 1 revealed that female retention in Technology Education programmes in tertiary institutions in Rivers State could be motivated by school factors such as affordable school fees, provision of secured accommodation (hostel), and adequate security in the classes among others. These findings are in line with Ijaduola (2017) who stressed that several school factors cause's female retention in Technology Education ranges from classroom setting, workshops, libraries, instructional materials, e-learning facilities and so on. Also, availability of adequate and modern training facilities to cope with rapid technological changes encourages



female retention in Engineering and technology related programmes as collaborated by Okwelle and Alaibo (2017) in a similar study. Furthermore, Owano (2016) noted that provision of better equipped workshops, supply of training materials and greater emphasis on practical skills would improve the programme and lead to increased in female access and retention in Technology Education. There was no significant difference in the mean ratings of Technology Educators and female students on school factors that motivate female retention in Technology Education tertiary institutions in Rivers State. As such, both categories of respondents held same view that certain motivational factors could lead to female retention of technological education students in tertiary institutions in Rivers State.

## 6. CONCLUSION

Female retention in Technology Education programmes in Rivers State tertiary institutions are found to be motivated by several factors. Hence, if policy makers of Technology Education, government, institutions, professional bodies of Technology Education improve on these factors, female retention in Technology Education will increase..

## 7. RECOMMENDATIONS

Based on the findings from the study, recommendations were made as follows:

1. There should be adequate security in hostels and classroom for female students
2. Automatic employment be given to female graduates on completion of programme
3. Preferential admission be given to females applicants into Technology education programmes

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