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POLITICIZING STME EDUCATION: IMPLICATIONS FOR FEMALE STUDENTS' PERCEPTION OF GENDER-SEGREGATED INSTITUTIONS IN AKWA IBOM STATE

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Abstract

Successive Nigerian governments have made several intensive political efforts with the aimed of repositioning Nigerian educational system and ensure female access to both formal and informal education especially in science and technology education. The study examined the perception of female students in gender-segregated schools. Two specific objectives and corresponding research questions were formulated to guide the study. A descriptive survey research design was used for the study. The population comprised all the students in Female Science Technical College (FSTC), Uyo. Purposive sampling technique was used to select all the SSS III students giving a sample size of 195 students. Data for the study were collected using researchers' developed instrument tagged "Perception of Student toward Gender-segregated School Questionnaire – PSTSSQ." The reliability of the instrument was 0.81 using Cronbach Alpha. Data were analysed using Percentage and Mean. The result show that though there is increase in access, gender-segregated school for female are not seen by the students as better than co-educational schools in either ensuring retention or enhancing achievement of female students in science, technology, mathematics and engineering (STME) education. Also, students indicated positive perception on gender-segregated schools as enhancement for participation in STME. It is therefore recommended among others that government should improve funding, qualified teachers and equipment for all students to learn meaningfully irrespective of gender.

Keywords: Implication, Perception, STME, Gender-Segregated, Politics and Participation

Introduction

Over the years, inadequate access to education has been identified as one of the main barriers holding back the advancement of females in education especially science and technology education. Education generally is concerned with the imparting of knowledge, skill and values to people. Etesike and Ogugua (2005) posit that education is the total process of human learning by which knowledge is imparted, valuable skills developed and faculties trained. Patrinos (2016) pinioned that Education is an investment and most

powerful instrument for reducing poverty and equality and set foundation for sustained economic growth. In traditional African societies, female education was regarded as a waste since they are not expected to participate in formal work activities outside the home. They were seen as silent workers, keeping the home, bearing and rearing children and helping their husbands in the farm (UNESCO, 2004).

The coming of Islam and Christianity did not help matters. Adeniran (2007) observed that with the disempowering

colonial ideology of “domesticity” as espoused by the practice of females as home makers, provided the basis for female's educational imbalance in parts of Africa.

However, emerging realities especially in this 21st century has revealed the need for female education and empowerment. According to Olujuwon (2011), formal education in Nigeria was under the control of Christian Missionaries between 1842 and 1881. St Andrew's College Oyo, Hope Waddel Institute Calabar and the Baptist Training Centre Ogbomoso, were among the first set of schools set up to train teachers. These institutions provided the much needed leadership in the production of primary school teachers in Nigeria. Anugwom (2009), posits that the missionaries venture in education was borne out of the desire to use the school and its curriculum to reinforce church doctrine. Hence, such schools at that time were largely pious, parochial and restrictive both in curriculum and organizational principles. The need to meet the country's manpower requirement led to the intervention of the colonial government in education.

Good as these efforts were, Salami (2002) observed that there were identifiable shortcomings inherent in the system of education offered by the missionaries then. Commenting on education in colonial times, Gaidzwanwa (2012), asserts that domestic education as enshrined in the ideology of female as primary home makers which was a social engineering initiative designed to create suitable wives for indigenous colonial employees further disempowered women socially and economically.

In Islam, knowledge, its acquisition and application is a fundamental requirement for all Muslims to enable them to believe, think, and act according to the principles of

the religion. However, differences in style of interpretation of the Qur'an have led to text being interpreted against its own fundamental worldview. An example is the recent attempted assassination of a Pakistani girl for advocating female education (Conrad, 2018). Based on analysis of selected verses, this article argues that the worldview of the Qur'an places importance on gaining knowledge of different kinds to fulfill divine requirements as well as all forms of human endeavor. Muslim traditions and attitudes to female education especially in Nigeria was not encouraging (Siann and Khalid, 2017). Conrad (2018) observed that female coming from a Muslim background in the Asian sub-continent are disadvantaged in the educational sphere. He went further to discuss that the issue of parental and husband's control over the rights of female to education and work cannot be isolated from traditional values about the importance of upholding family honour. Muslim female's educational attainment is lowest in sub-Saharan Africa.

A recent study by the Pew Research Centre has revealed that there exists a considerable Muslim-Christian education gap in sub-Saharan Africa. While Christians average six years of formal schooling, for Muslims the figure is fewer than three years (Anugwom, 2009). Much of the reason for this gap lay in the colonial past on the part of both the colonial authorities and Muslim communities. Western-style educational schooling in Africa was introduced by Christian missionaries. Colonial authorities were loath to allow these missionary schools to operate in Muslim-dominated areas in an effort to avoid religious conflict (Bamidele, 2011). In other cases Muslim parents fearing discrimination and conversion to Christianity of their children prevented them from attending such schools.

However, since Nigeria independence in 1960, successive Nigerian governments have made several intensive political efforts with the aimed of repositioning Nigerian educational system and ensure female access to both formal and informal education especially in science and technology education. These efforts include the use of political force for adoption and ratification of international conventions and instruments to balance the educational gaps between the Northern and Southern parts of the country especially in science and technology education through gender-segregation institutions. These instruments have always emphasized the need to put in place all the necessary mechanisms needed to eliminate gender discriminations, ensure equality and human dignity to all men and women (Ciroma, 2006). Students' achievement and interest in Science, Technology, Mathematics and Engineering (STEM) can be influence by many factors including gender. Some of the provisions in this document were concerning female education. For instance, article 10 of CEDAW (1979), which concerns female's right to education, requires measures to ensure same opportunities for women as for men in access to programs of continuing education including adult and functional literacy programs, especially those aimed at reducing the gap in education between men and women, promote enrolment, retention and training for women at all levels and disciplines, particularly in the fields of science and technology, promote the enrolment and retention of girls in schools and other training institutions and the organization of programs for women who leaves school prematurely.

In political perspective, educational inequality among females in Nigeria has remained a perennial issue, since the introduction of western education and influence of Islam in Nigeria especially in

science and technology education. Achievement of equal status in educational attainment among females in science and technology education has continued to be elusive. To reduce the gender gap, we need to help more females to pursue a career in science, technology, engineering and mathematics (STEM). Gender equality in science and technology is not only vital to achieve the sustainable development goals, it is also a critical element for creating a flourishing culture of innovation in the enterprise. A highly diverse team with different perspectives and skill, enhance ability to innovate and functional society.

The challenges particularly, as it concerns science and technology is disturbing, especially in the light of the importance of science and technology in this 21st century education to the socio-economic and scientific development of the nation. The Federal Government in Nigeria adopted the idea of establishing gender-segregated institutions for science and technology education to balance the inequality gap among females participation in science and technology education. (Adeniran, 2007).

Science and technological education is permeating all domains of life in the contemporary world with pervasive roles in national economic and scientific development. Students' perception about the type of school is a critical factor. Ithen (2012) and Ekpo (2014) observed that though there has been considerable progress in facilitating female access to education, however gender disparity in participation, performance and completion of science and technology based programmes is still on the increase. The participation of female students in science and technology education is generally low and even lower as one moves up the educational hierarchy from secondary to the tertiary levels.

Baba (2010) enumerated gender specific deficiencies to include coping under stressful condition of learning, coping with male counterparts, commitment to home resulting to unwillingness to work beyond certain hours, and frequent lost of time through parental and child caring. The then Honourable Minister of Education, Prof. Jibril Aminu said the Federal Government was committed to pursuing a deliberate policy of positive discrimination in favour of females in Science, Technology Mathematics and Engineering (STEM) (Aminu, 2012). This was in line with policy objectives already enunciated by the Federal Government (FME, 1989) that stated the provision of more educational opportunities for girls from primary to tertiary levels of education. In pursuance of these objectives, the Federal Government launched the national awareness campaign on female education and the campaign according to Mohammed and Junaid (2000) had among other programmes, establishment of gender-segregated schools. Okebukola (2008) reported that Federal Technical Colleges were converted to run full 6-year programmes as against the previous five year programmes in order to increase access and enrolment. These measures were parts of the political policy of the Federal Government that was aimed at giving female students an edge to participate in STME and have visibility. It is this thinking that influenced reserving science and technical institutions exclusively for females like the Federal Government Science and Technical College, Akwa Ibom State. This is a clear case of politics in education and positive discrimination in practice by the Federal Government.

However, Baba (2012) pointed out that, there are some other schools of thought who advocate that female do not need any enhancement through gender-segregated schools that the male and female students should be allowed to interact and learn

together. The questions raised in the light of this study are: what is the perception of students in gender-segregated school and their participation in science, technology mathematics and engineering education? Do female students perceive the use of gender segregated schools as enhancement for participation in science technology, mathematics and engineering education?

Statement of the Problem

Gender equality in Science, Technology, Mathematics and Engineering (STME) has remained a challenge in Nigeria. Over the years, female students prefer to enroll in greater number in arts and social sciences than in science and technology subjects. Due to this persistent problem, the Federal Government of Nigeria came up with policy that was politically masterminded to encourage female enrolment and participation in science and technology education and to provide more educational opportunities for the female students and to balance the gender gap by establishing gender-segregated schools specifically for science and technology. This gives rise to this study on female students' perception on gender-segregated school and their participation in science, technology, mathematics and engineering education. Therefore, the problem addressed by this study is to examine the perception of students in a gender-segregated school and their participation in science, technology, mathematics and engineering education.

Purpose of the Study

The study aimed at examining the perception of female students to the use of sex-segregated schools to encourage participation of females in Science, Technology, Mathematics and Engineering (STME) education. Specifically, the study sought to:

1. Examine female students' perception of gender-segregated schools and their participation in science, technology, mathematics and

engineering education

2. Examine female students' perception of gender-segregated schools as enhancement for participation in science, technology, mathematics and engineering education.

Research Questions

The following research questions guided the study:

1. What is the perception of female students in gender – segregated schools and their participation in science, technology, mathematics and engineering education?
2. Do female students perceive gender – segregated schools as enhancement to cope with science, technology, mathematics and engineering education subjects?

Methodology

Population of the Study

The population of the study was all the students of Federal Science and Technical College, Uyo, Akwa Ibom State. The population of the study comprised 195 students in SSS III in 2018/2019 session. This class was used for the study because of their experiences and level of studies in science and technology subjects in the school.

Sample and Sampling Technique

The sample for the study consisted of 195 SSS III female students in Federal Science and Technical College, Uyo. Since the population of the female students is of a manageable size, a purposive sampling technique was used for the study. This is in consonant with Osuala (2005) who stated that the entire population should be studied when the population is small

Instrument

A questionnaire tagged "Perception of Students Toward Gender-segregated Schools Questionnaire (PSTSSQ)" was

designed by the researchers and used for the purpose of data collection. The respondents were required to record their responses on a 3-points scale of agree (A), undecided (UD) and disagree (D). The response items had scales values of 3, 2 and 1 respectively.

Validation of the instrument

The instrument was given to three experts for face validation. Two of the experts were from Department of Science Education, and one from Measurement and Evaluation, all from University of Uyo. These experts were requested to read the items of the instrument one after another, make corrections, indicate the suitability of the items, language used and the arrangement of the items in logical and chronological sequence having attached the research questions.

Reliability of the Instrument

The reliability coefficient of the instrument was determined using Cronbach Alpha statistical tool. The instrument was tested on 30 students who were not part of the main study. From the analysis, the reliability coefficient 0.81 was obtained.

Administration of the Instrument

The instrument was administered personally by the researchers to the sampled students through the help of class teachers. The instructions for completing the questionnaire were also explained to the students by the researcher. Only three questionnaires were returned unfilled out of the 198 questionnaire administered resulting 95.2% return rate

Method of Data Analysis

The research questions were answered using descriptive statistics of percentage while the hypotheses were tested using Pearson Product Moment Correlation Analysis at 0.05 level of significance.

Results

Research Question 1: What is the perception of female students in gender –

segregated schools and their participation in science, technology, mathematics and engineering?

Table 1: Descriptive analysis of perception of female students in gender-segregated schools and their participation in science, technology, mathematics and engineering

S/N	Items	A	%	D	%	Mean	Remark
1	I like my school because it is females only	127	65%	68	35%	2.30	Positive
2	Female teachers serves as role models in my school as such encouraged us to study science and technology	107	55%	88	45%	2.09	Positive
3	I receive special treatments and encouragement in the science and technology subjects	64	33.3%	131	66.7%	1.66	Negative
4	The status of this college as female only made me to enrol in the college	39	20%	156	80%	1.40	Negative
5	Teachers treats us with more respects and encourage participation	52	26.7%	143	73.3%	1.53	Negative
6	I would have been better if I was in a coeducational school	166	85%	29	15%	2.70	Positive
7.	I am more secured attending a sex only school	39	20%	156	80%	1.40	Negative

From Table 1 presents the students responses on the seven items on their perception about gender-segregated and student participation in science and technology education. The students agreed to items 1, 2 and 6 which indicated positive perception of female students on gender-segregated schools as encouragement for participation in science and technology education while 3, 4, 5 and 7 indicated

negative perception of female students on gender-segregated schools for participation in science and technology education.

Research Question 2: Do female students perceive gender-segregated schools as enhancement to cope with science, technology, mathematics and engineering education subjects?

Table 2: Descriptive Statistics on female student's perception of sex-segregated schools as enhancement to cope with science, technology, mathematics and engineering education subjects

S.N	Items	A	%	D	%	Mean	Remark
1	Science and technology courses are too difficult for female	72	36.7%	123	63.3%	1.74	Negative
2	Female do not have the physical capability to undertake science and technology courses	32	16.7%	163	83.3%	1.33	Negative
3	Females need special treatment to cope with science and technology	175	90%	20	10%	2.79	Positive
4	There should be more science and technical schools for females	55	28.3%	140	71.7%	1.56	Negative
5	Learning science and technology courses would be more difficult in mixed schools	45	23.3%	150	76.7%	1.46	Negative
6	Every students can do well in STME subjects irrespective of gender	162	83.3%	33	16.7%	2.66	Positive
7	Mixed schools are better because males help females academically	143	73.3%	52	26.7%	2.47	Positive
8	My performances would be better if I was a mixed school	159	81.7%	36	18.3%	2.63	Positive
9.	I like healthy academic competition between male and female students in mixed school	162	83.3%	33	16.7%	2.66	Positive

Table 2 shows that items 3,6,7,8 and 9 indicated positive female student's perception of gender-segregated schools as enhancement for female to cope with science and technology education while items 1, 2, 4 and 5 indicated negative response on student's perception of gender-segregated schools as enhancement for female students to cope with science and technology education. Specifically, item 3 which was on special treatment for female students to cope in science and technology courses had the highest positive female student's perception score of 90%. Thus implies that female student's needs

motivation to arouse their interest in science and technology subjects.

Discussion of Result

The result presented in the Table I shows that some items of gender-segregated schools which may appear as reasons for establishing gender-segregated school are not necessarily seen as such by the female students. For instance, although female students may like gender-segregated schools exclusively for females, the respondents did not enrol into the school because of its gender-segregated status. It may well be that some of the students did

not have prior knowledge of the school receiving any special treatment because of their gender. They do not also perceive teachers treating them with more respect because they are females. In other words, apart from the possibility of increased access which the school provides to female, the respondents do not see themselves as different from those in conventional co-educational schools. This study do not differ from Eta (2012), who noted that apart from access, the other dimensions of inequality in educational opportunities against female students are retention and achievement.

The result in Table 2 shows that the respondents do not agree that science and technology subjects are too difficult for females. They also do not agree that females lack the physical capability to undertake science and technology subjects. On the contrary, as shown in item 6 of Table 2, everyone can do well in science and technology courses irrespective of their gender. However, the respondents maintained that female students need special treatment in order to cope with science and technology subjects. The findings shows that, while the government saw gender discrimination in terms of increasing access and politically balancing female participation in science and technology education, the students were more interested in discriminatory practices that will enhance their participation and achievements in the male dominated disciplines of science and technology. These is in line with the study conducted by Baba (2010) on possibility of female students to survival and perform in male dominated school particularly necessary in view of the limitations coeducational schools pose to female learner's retention and achievement

In Table 2 item 4, the respondents do not agree that more gender-segregated schools should be established. In fact, they feel that

coeducational schools are better because female students get academic help from male counterparts. Even in the areas of cooperation, the respondents do not agree that they cooperate more among themselves than with male colleagues. This implies that the respondents would like female gender-segregated schools to be coeducational according to findings. Curiously enough this item has the highest score 71.7% among all the items asked. Probably what the respondents expect from gender-segregated is much more than access, but assistance and motivation to learn. This may explain why the respondents feel that their academic performances would be better if their school was coeducational. Contrary to this opinion held by the respondents, Saura (2017) reported that students in gender-segregated schools performed better in mathematics than students in coeducational schools.

Conclusion

Gender-segregated school for female are not seen by students as better than co-educational schools in either ensuring retention or enhancing achievement in STME education.

Recommendations

1. In politicking gender-segregated education policy, considerable effort still has to be done into improving female students' participation in science, technology and mathematics.
2. Political will in funding particularly science/vocational/technical institutions have to be revitalized.
3. Schools system especially science and technical schools should be well equipped to make it suitable for all types of learners irrespective of gender.

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