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Effect of socioeconomic and sociocultural barrier on female education: Implications for students' enrolment and learning in physics

Aina, Jacob Kola

Physics Department, College of Education (Technical) Lafiagi, Kwara State, Nigeria

Email address
akoja64@gmail.com

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Abstract
This paper focuses on socioeconomic and sociocultural barrier on female education in Nigeria and the effect of such barrier on students' enrolment and learning of female students in physics. The paper reviewed poverty as the major socio economic barrier to female education thereby reducing the number of female students in schools. There are some cultural practices that affect female education such as girl initiation, religion and early marriages. The paper discussed the effect of these barriers on female students' enrolment and performance in physics. Some recommendations were suggested after the review such as formulating and enforcing laws banning marriages among girls of school age.

1. Introduction

Education is a necessary tool for human development in anywhere in the world; therefore should be a right for both boys and girls. Education is a universal human right. However, global data shows that at all levels girls have less access to education than boys (ILO, 2009).

Female education in most places in the world is often discriminated against for many reasons. The discrimination has affected female enrolment and learning in many courses or disciplines. This paper is reviewing the socioeconomic and sociocultural barriers to female education and the effects this barrier has on female enrolment and learning in physics. This review is very important because of the relationship between education provision and the socioeconomic conditions in any society as observed by Kiraikenks (2011).

Socioeconomically, many homes have been broken because of hardship in the economy. The break has serious effect on children education with the effect more serious for the female resulting into child labour. International Labour Organization (ILO) put it thus:

All children involved in child labour are vulnerable. To begin with, the chances are that they come from poor families. They often belong to a socially excluded community, such as an ethnic or indigenous group or a group with a subordinate station in the social hierarchy. They may live in rural areas where there are few facilities. All these factors create disadvantages which have an impact on boys and girls alike, but girls face additional challenges (p.19)

In Nigeria many girls are withdrawn from school because of parents' poverty. Such girls are sent into the society for various kinds of work such as house maid, agricultural work, shop attendant, hotel worker and many more. This is done to get money for their schooling as Awoniyi (2001) rightly observed that many girls are responsible for their education costs and this leads them to sexual related problems.

In some part of African states girls are not allowed to attend school like boys for cultural reasons. For effective learning to take place there is that need to break every cultural barrier as argued by Lee (2012) that for optimal meaningful learning sociocultural consideration is very important. In a related issue Adebayo (2001) believed there is the need to break the sociocultural barriers that have hindered females from going into technical education. Some communities have a negative opinion about women education as observed by Babiyi, Joda and Halilu (2004) that some communities still hold the opinion that women education should not go beyond the traditional role of full-time house wife, mother and home keeper.

Many Northern states in Nigeria do not permit female western education because of their religion inclination. Their counterpart in the West holds the opinion that money spent on female child in school is a waste because such female will end up in a man house. Both the South and the Eastern communities prefer sending their girls to early marriage in other to make fortune from such venture. Adeyemi and Adebara (2001) summarized it that socioculturally the women education has never been given any serious priority.

The culture of some societies like India permits families to have many children which eventually increase their poverty level. Begum (2009) said in India girl child are not sent to school, they learn only local language in home, their parent feel girl child education is not necessary.

In the light of the foregoing, girls' population in school had serious reduced compared to that of boys. The few ones in schools are not well distributed across courses or disciplines. Some courses have more of girls such as Art and Secretariat studies (Ahmed, 2001). The few found in science subjects are having low academic performance especially in physics as reported by many studies. Osborne, Simon and Collins (2003) asserted that boys shows stronger attitude towards physics than girls. Hazari and Potvin (2005) said Physics is a course where we have low female participation. Wanbugu, Changeiywo and Ndiritu (2013) viewed that there is low enrolment and performance of female students in physics in Kenya schools. Musasia, Abacha and Biyoyo (2012) confirmed girls' low enrolment and poor performance in physics in Kenya secondary schools. Alao and Abubakar (2010) noticed gender differences in physics performance among colleges of education students. Stephen (2010) and Victoria (2011) posited that male students performed better in physics than female in secondary school. Adeyemo (2012) in his view noticed underrepresentation of female in physics. Greeberg (2006) submitted that generally in the world men study physics more than female.

Aina and Akintunde (2013) said male students performed better than female in physics. Female enrolment has been low in college of education (T) Lafiagi as observed by Aina (2012). The table below shows female enrolment in Physics for five years.

Table 1. *Female enrolment in Physics in a school.*

S/n	Session	Male	Female	Total
1	1998/99	6	2	8
2	1999/2000	2	-	2
3	2000/2001	12	3	15
4	2001/2002	13	5	18
5	2002/2003	6	9	15

Source: Examination Unit College of education (T) Lafiagi

The table above is showing enrolment in physics ten years back but yet the situation is still similar today only just an insignificant improvement.

Though there is improvement in enrolment but very insignificant compare with the growth in science and technology. An urgent step is required to remove all the barriers to allow more girls enroll in Physics.

2. Socioeconomic Effects on Female Enrolment and Performance in Physics

These paper will consider two sociocultural factors out of many that are affecting female education which eventually leads to low enrolment and poor performance of girls in physics.

2.1. Poverty

Poverty is a serious enemy of our children education. For parents struggling to raise a child, poverty adds extensive stress to the family (Driscoll & Nagel, 2010).Many girls who should have been doing fine in physics class have been withdrawn to work for money in the course of this got impregnated. Some of them who have the courage and interest to come back to school find it very difficult to concentrate on their studies. They already have divided attention to learning and their babies. There are burden of child rearing and that of reading on a girl who has put to bed while in school. ILO put it this way:

Women and girls often spend significantly more time on household chores and caring duties, such as child-rearing or attending to the sick, than do their male counterparts. The obligation to undertake household chores inevitably limits the time available for education and other activities (p.20).

Child labour has been the result of poverty and this is seriously affecting children education all over the world with more effect on girls. According to ILO (2009) over

100 million girls between 5 and 17 years old are believed to be involved in child labour worldwide. My personal experience as a physics teacher in tertiary institution shows that female students with children spend more than half of their time attending to their children. Sometimes during lecture period and even in examination time they oscillate between children caring and learning; the result of this is low grade in physics courses.

2.2. Parental Perception

Parental perception of female education is equally very inimical to female enrolment and performance in Physics. Some parents have the wrong notion that male are more intelligent than female (Awonyi, 2001) and therefore do not take investment on their education very serious. Such girl who is not financially supported will surely find ways of supplementing whatever is given at home either legitimately or illegitimately. In many campuses it is not uncommon to see female students engaging in petty businesses like selling stationeries, water, recharge cards etc. On the other hand some girls must hawks before they go to school. All these affect both students' enrolment and academic performances. Physics is a course that needs student's full attention. Physics is one of the core sciences and crucial to understand the world around us, it is the most basic and fundamental science and there is the need for students to study the subject with utmost understanding (Agommuoh and Ifeanacho, 2013).

Feeding is very important in learning as opined by Norman (2009) that brain require sufficient nutrients from food during learning process. It is therefore compulsory and important that children feed well for good academic performance but cases in many homes in Africa countries are different because of poverty.

The effect of inappropriate feeding is much on the female than the male. In other to prevent women abuse many decent girls prefer to learn with empty stomach rather than to seek for food in an illegitimate way which may result into immorality. Those who can even preserve female dignity in the course of labouring for food doesn't get healthy diet; because of the hard labour involved they are already physically affected when back to classes. We have few of such students in physics class. According to Berno (2013), improved academic performance can be enhanced through a healthy diet and physical fitness.

3. Sociocultural Effect on Female Enrolment and Academic Performance in Physics

Socioculturally, female students are having lots of disadvantages in education and this seem to be everywhere in the world. The role put on girl as a future housewife and mother is having a negative influence on women formal education (Awoniyi, 2001).Women have been oppressed as a result of institutions and processes which promote male bias; this has become acceptable by women in oppressive cultures (Joseph, 2012). There are three sociocultural factors considered very germane to this review.

3.1. Girl Initiations

There are communities in Africa where girls are initiated into sex at a very early year. According to Reilly (2014), girls of ten years of age are sent to camps to have sex and lose their virginity. Girls from this cultural background are already rubbed of their educational opportunity once they become pregnant as stressed by Reilly (2014) that a girl is forced to marry immediately she is pregnant.

Physics as a core science subject unlike other discipline requires observation, experimentation, collection of data, data analysis, and other science processes. Time and commitment is highly needed from students which might be difficult for pregnant women and nursing mothers however, few that can cope may not be able to achieve the best.

3.2. Early Marriage

One major problem militating against female education in Northern state of Nigeria is the practice of early marriage (Awoniyi, 2001). In Malawi a girl could be forced into marriage very early as soon as the ceremony of initiation is completed (Reilly, 2014). In other part of Nigeria as soon as a girl is born into a family she is immediately given to an adult male as a wife; even if the girl has interest in formal education she could be withdrawn at any time for the man who has already paid her dowry. Most of these girls who had the knowledge of her parent intention are psychologically sick and could not enjoy her study. Some will abscond from home and abandon her school completely. There was a case of a very brilliant girl in a College of Education in Physics/Mathematics department who her father insisted on marriage; this girl could not finish her first degree before she was impregnated and got married. Every year I have an average of one or two female students who married as students in physics classes. The result is that before they finish their three years programme they are already nursing mothers. Those who are single have not found studying physics very easy because of its nature not to talk of people who combined learning with rearing of children.

3.3. Religion

Clocough and Lawin in Awoniyi (2001) said Islam has been associated with low participation of female in schools. There is that wrong notion of imposition of Western formal education for the purpose of converting people to Christianity. For these reason Islamic communities opposes formal education especially for the female for fear that western education promote value contrary to cultural norms. Abbasi (2009) in his paper on Women and Education in Islam admitted that religion particularly is cited as a major stumbling block for women's advancement. Similarly, Norton and Tomal (2009) reported that religion adversely

affects female education.

The abduction of more than 200 schoolgirls by Boko Haram in Borno state of Nigeria is a case study. The major reason behind this abduction is opposition to Western education by the abductor. This attack was more on female because of the religion belief that women are suppose not to be educated but are to go for marriage instead.

4. Conclusion

From the review it is very obvious that there are socio economic and sociocultural barriers to female education in Nigeria. These barriers are poverty, girls' initiation, parental perception, early marriage and religion. The paper highlighted the effects of these barriers on female enrolment and performance in physics. Specifically, the paper was of the view that child rearing and physics learning cannot go together; nursing female students in physics class have not been doing well based on the experience of the author.

Recommendations

The following recommendations are hereby suggested based on this review:

1. Government should ensure that the present high rate of unemployment is reduce through creation of jobs for the unemployed people.
2. Girl child education must be taken very serious by both parents and the government by banning street hawking among school girls.
3. The International law on child labour should be strictly adhere to by individuals and the government of Nigeria.
4. Girls in physics class should be properly counsel on the importance of focusing their studies rather than marriage.
5. Government should promulgate laws restricting marriages among school age girls.
6. Scholarship and Bursary should be awarded to girls in physics class who are brilliant and encourage them to further their career in physics.
7. Nursing mother should not be allowed in physics class in our tertiary institution. A female student should be made to either finish nursing before coming into physics class or graduate from physics class before child rearing.
8. Nigerians should be properly guided on the importance of religion to education especially girl - child education.

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