

# Effects of Sexuality Education Enriched Instructional Package on Students' Understanding of Health Related Topics in Biology

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## Abstract

The study was designed to investigate the effect of sexuality education-enriched instructional package on students understanding of health-related topics in biology. The study employed a pre-test post-test quasi-experimental design. A sample of 199 SSII students, drawn through purposive sampling technique from two co-educational schools in Nsukka education zone was used for the study. The two schools were assigned to treatment and control groups respectively. Two intact classes in each school (one as experimental and the other as control group) were randomly selected. The 'Biology Students Understanding of Health Topics' (BSUHT), which had a reliability estimate 0.72 was used to collect the data. The hypotheses were tested at  $p < 0.05$  using analysis of covariance (ANCOVA). The result of the analysis showed that the students exposed to sexuality education-enriched instructional package on health-related topics in biology achieved higher their counterparts exposed to the conventional method. Gender was a significant ( $p < 0.05$ ) factor in students' understand of the health-related topics in biology in favour of females. However, there was no significant interaction between method and gender on the students' understanding of the health-related topics in biology. Consequently, it was recommended that sexuality education should be integrated in instruction by biology teachers while teaching health related topics.

**Keywords:** sexuality education-enriched instructional package, sexuality education, health-related topics, teaching method, gender, biology, instructional package, students understanding, adolescents.

## 1. Introduction

In the traditional African setting, it was a widely held belief among parents that the best way of preventing sexual immorality among youths was to shield them from discussions pertaining to sex matters. For girls, some anxious mothers might only issue one or two warnings about their menstruation experiences but for boys, they were kept in total black out of discussions on sex matters. However with the awareness created by western education, there appears to be emerging, a new belief and attitude among parents towards sex matters. This emergent belief and attitude is characterized by greater openness and permissiveness about sexual matters and has given rise to sexual promiscuity. Alluding to this emergent belief and attitude, Ochiagha (1990) opined that, this era has witnessed an almost revolutionary attitude towards sexuality and sexual activity. Individuals, in more recent times, tend to be more open and permissive in their views about premarital sex, extra-marital sex, homosexuality, separation, divorce etc. The use of contraceptives that has generated a great deal of controversy among the youths, families, state and nation is now a major issue in sexuality education.

Sexuality is an important aspect of the life of human beings and almost all the people including children want to know about it (Anyaebugnam, 2006). About 50% of the world's population is under the age of 20 years and are at the highest risk of sexual and reproductive health problems, thus making sexuality the root of most sexual and reproductive health problems (Briggs, 1999). According to National Aids and Sexually Transmitted Diseases (STDs) Control Programme (2006), 63% of all new HIV infections in Nigeria are among youths within 15 to 24 years and abortion is one of the consequences of insufficient information about HIV. The increasing population of adolescents in our society with inadequate information about sex education is witnessing an unprecedented "wound" in traditional rules and norms and behavioural controls, (Jinadu and Odesammi, 1993). The outcome of such a scenario is rampant rape, unwanted pregnancies, unsafe abortions, sexually transmitted diseases (STDs), Human Immune Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) and increasing number of multiple sexual partners (CDC, 2007 and Kingdom, 2010).

Adolescent stage which corresponds to the period 10-17 years is associated with sexual development from the first appearance of secondary sex characteristics to sexual and reproductive maturity. This is accompanied by the development of adult mental process, adult identity as well as socio-economic dependence to total independent life (World Health Organization WHO, 1995). During early adolescence, many experience a new uncertainty about their bodies and how they function (Nnachi, 2008). As time progresses, some feel confused about what they are supposed to do in a number of circumstances making sense of evolving

relationship with family and peers. Hence adolescents tend to be rebellious against social and family norms of behaviour which are divergent to their sexual feelings and desires (Nnachi, 2008). Therefore, this may result in early sexual initiation, unprotected sexual activities and multiple partners. To this effect, adolescents need accurate and necessary information to enable them understand the new changes in their body and how to adapt and adjust to such changes.

This underscores the need for sexuality education for secondary school students who are at the adolescent stage. According to Ochiagha (2007), sexuality education is a programmed package for equipping individuals with appropriate knowledge, information and skills, that would enable them to understand and handle their sexuality personally and in relation to others. Adolescents must be made to understand the basic truths about their maleness and femaleness and their implications. Oyekan (2008) is of the opinion that sexuality education in the secular world is 'teaching the youths about their bodies, how to respect each other, how to abstain from sex and how to protect themselves if they decide to have sex. It is a lifelong process of acquiring information and forming attitudes, beliefs and values about identity relationships and intimacy.

The primary goal of sexuality education as identified by United Nations Education Scientific and Cultural Organization (UNESCO 2009) is the promotion of sexual health by providing children and young people with opportunities to:

- acquire the knowledge, skills and values to make responsible choices about their sexual and social relationships in a world affected by HIV
- Learn about the risks of pregnancy and sexually transmitted infections
- Learn about the risk of sexual exploitation and abuse in order to recognize these when they occur
- Protect themselves as far as possible and to identify and access available sources of support.

Hence, sexuality education usually focuses on such content as human sexual anatomy, sexual reproduction, sexual intercourse, reproductive health, emotional relations, reproductive rights and responsibilities, values, decision making, communication, dating, relationships, sexually transmitted diseases and how to avoid them, and birth control methods (Henry, 2005; Collins, 2008 ; Iwu, Onojo, Ijioma, Ngunah, and Egberuoh, 2011).

Some common delivery modes for sexuality education are parents or caregivers, public health campaigns and school programmes (Guardian, 11 May, 2004). As a school programme, it could be a full course of the curriculum in junior or senior secondary school or only one unit within a subject such as biology , home economics or health and physical education. In spite of the high rate of sexually transmitted diseases including rape, teenage unwanted pregnancy and unsafe abortion among young people and adolescents (Stall, 1996), sexuality education is not a full course in either junior or senior secondary schools in Nigeria. Therefore, integrating or infusing sexuality education content into instructions in related subjects appears to be the only option.

By its nature and popularity as a secondary school subject, the biology curriculum should serve as a viable avenue for sexuality education. However, the current biology curriculum does not contain enough sexuality education contents but has topics which could be enriched with sexuality education content.

Research evidence (Eke, Mazi and Nonso 2004) tends to suggest that girls are the major victims of sexually related problems and more often than not, this affects their academic progression in life. This makes gender a critical factor in sexuality education (Maduekwe , 2004 and Abraham, 2006). In the same vein, Okoroafor (2004) noted that gender plays a very significant role in the performance of students in any subject and that in most cases, majority of male students abandon biological sciences or perform poorly in biology.

At this point, it is not certain how enriching health-related topics in the Nigerian senior secondary school biology curriculum with sexuality education content would affect students understanding of the topics taking cognizance of gender. This study therefore investigated the effects of a sexuality education-enriched instructional package and gender on students' understanding of health related topics in Biology.

It was hypothesized as follows:

1. There is no significant difference between the mean score of students taught using sexuality education enriched instructional package and those taught using the conventional teaching method.
2. There is no significant difference between the mean score of male and female student taught biology using sexuality education enriched instructional package.

## 2. Materials and Methods

The study adopted the non-equivalent control group quasi-experimental design (Gay and Airasian, 2000). This design is considered appropriate for this study as intact classes were used.

The participants comprised 199 senior secondary class 2 (SS II) students (79 males & 120 females) from two co-educational schools in Nsukka local government area. The criteria for the selection of schools include: schools with a minimum of two arms of SS II students in biology, and availability of qualified biology teachers in SS II. Two intact arms (or classes) were selected from each school through random sampling where there were more than two arms of SSII in biology. The two intact classes in each school were randomly assigned to treatment and control groups respectively.

The Biology Students' Understanding of Health Topic achievement Test (BSUHT) was used in the collection of data. The BSUHT was made up of 10 short essay questions designed by the researchers to measure biology students' understanding of the content chosen for the study. The researchers developed a marking guide for the items. Each item or question in the BSUHT was weighted 10 scores. The marking guide broke down the answer to each question into five salient points and allotted two (2) scores to each salient.

The experimental and control groups were both pretested after which they were exposed to instruction on the selected topics. Their regular class teachers taught the control group using conventional instructional method while the experimental group was taught using Sexuality Education Enriched Instructional Package (SEEIP). Each lesson lasted for thirty five (35) minutes. The entire experiment lasted for six weeks. At the end of the treatments, post-test was administered to the two groups. The scripts were scored following the marking guide and the scores analyzed using mean scores, standard deviation and analysis of covariance (ANCOVA).

### 3. Results

Table 1. Mean and standard deviation of achievement scores of students taught health-related biology topics with sexuality education-enriched instructional package and conventional method

GROUP	PRETEST			POSTTEST		MEAN GAIN
	NO	MEAN	S.D	MEAN	S.D	
EXP.	100	46.98	9.10	56.26	9.50	9.28
CONTROL.	99	37.94	7.95	45.31	7.72	7.37
DIF. IN MEAN		9.04		10.95		

Table 1 revealed that students in experimental group had a mean score of 56.26 in the post-test as against 46.98 in the pre-test score, resulting in a mean gain score of 9.28. The control group which had a pre-test and posttest mean scores of 37.94 and 45.31 respectively recorded a mean gain score of 7.37. This means that the sexuality education enriched instructional package produced a higher gain score than the conventional instructional approach with respect to students understanding of health-related topics in biology.

Table 2. Mean and standard deviation of achievement scores of Male and female students on health-related biology topics

GENDER	NO	EXPERIMENTAL			NO	CONTROL	
		MEAN	S.D	MEAN		S.D	MEAN GAIN
MALE	40	52.88	7.32	39	42.72	7.13	7.61
FEMALE	60	58.52	10.15	60	47.00	7.68	8.80

It is evident from Table 2 that the female students who recorded a mean gain score of 8.80 were more responsive to the sexuality education – enriched instructional package than their male counterparts who had a mean gain score of 7.61.

Table 3. Analysis of Covariance (ANCOVA) of students achievement scores as measured on the Biology Students Understanding of Health Topics (BSUHT) by Method and Gender

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1364.324 <sup>a</sup>	4	3412.081	93.339	.000
Intercept	3378.383	1	3378.383	92.418	.000
METHOD	820.364	1	829.364	22.688	.000
GENDER	257.688	1	257.688	7.049	.009
PRETEST	6489.459	1	6489.459	177.523	.000
Error	7091.797	194	36.556		
Total	534572.000	199			
Corrected Total	20740.121	198			

a. R Squared = .262 (Adjusted R Squared = .250)

From the result of the ANCOVA in Table 3, it could be seen that both method and gender had significant effects ( $p < .05$ ) on students understanding of health-related topics in biology. This implies that the difference in the mean understanding score of students taught health-related topics in biology using sexuality education-enriched instructional package and those taught using conventional method was not due to chance. Similarly, a real difference existed between the male and female students' in terms of their understanding of health-related biology topics. This difference was in favour of the female students.

#### 4. Discussion

The results of this study revealed that sexuality education-enriched instructional package enhanced students' understanding of health-related biology concepts. Sexuality is an important aspect of the life of human beings and almost all the people including children want to know about it (Anyaebugnam, 2006). As noted by Ochagha's (2007), sexuality education equips individuals with appropriate knowledge, information and skills that would enabled them to understand and handle their sexuality personality and in relation to others. Indeed, sexuality education assists adolescents, young people and youths in understanding and developing positive views about sexuality and also provides them with the skills and information for taking care of their sexual health. This enables them to take accurate and sound decisions on matters affecting them both now and in the future. Therefore educating adolescents on the health risks and potential side effects associated with the physical, emotional and social changes at various stages of their development may act as a motivational factor that could arouse their interest in biology and thus enhance their understanding. Furthermore, many secondary school students are known to hold numerous misconceptions about health-related biology topics due to the fact that they are not adequately informed about family life and sexuality issues (Ode, 2005). When sexuality education is integrated in biology instruction, such students would become better informed to the extent that any previously held misconceptions would be modified.

The result of the study further revealed that although both males and females benefited significantly from the use of sexuality education-enriched instructional package, the females tended to benefit more. Females are highly vulnerable to risky sexual encounter as it may result to unwanted pregnancy leading to disruption in their academics. This may explain why they were more interested and showed greater commitment in the instructional process that resulted to higher achievement than their male counterpart.

In general, the results of the present study tend to reinforce the clarion call for sexuality education at the secondary education level in order to provide young people with adequate knowledge of human sexuality which until now they learned accidentally and inaccurately (Berke, 2002 and Maduekwe, 2004).

## 5. Conclusion

Evidence adduced from the present study has shown that sexuality education-enriched instructional package was efficacious in enhancing students' understanding of the health-related biology topics. Although both males and females benefited significantly from the use of sexuality education-enriched instructional package, the females who are more vulnerable to risky sex encounter, tended to benefit more. Gender had a significance influence on students' understanding of the health-related biology topics in favour of the females.

## 5. Recommendations

Based on the foregoing, the following recommendations were made:

1. Secondary school biology teachers should integrate sexuality education into health-related topics in the biology curriculum during instruction since this study has shown that such a practice has a facilitative effect on learning of such topic.
2. Opportunities should be provided by relevant State and Federal government agencies for strengthening biology teachers' capacity in the area of integrating sexuality education in biology instruction.
3. Parents' should be sensitized and encouraged to provide adequate information to their adolescent children on health-related issues especially as it concerns their sexuality.

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