

# SCHOOL -BASED SEXUAL AND REPRODUCTIVE HEALTH EDUCATION: STUDENTS PREFERRED LEARNING STYLE IN SECONDARY SCHOOLS IN BENUE STATE, NIGERIA

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**Abstract** - High risk sexual behaviours reported among adolescents in Benue state despite a decade of implementing Sexual and Reproductive Health Education ((SBSRHE) underscores the urgent need to examine the students preferred learning style on the premise that when teachers adapt instructional methods to suit the learners style it enhances knowledge and attitude change. Survey method was adopted to examine students preferred style of learning sexuality education measured with Barsch's Learning Style Inventory ( $\alpha=0.72$ ). One thousand eight hundred and twenty-four students consisting 925 (50.1%) males and 899 (49.3%) females were randomly drawn from nine secondary schools implementing Family life HIV Education (FLHE) in Benue state. Result reveal that of the 1824 students 916 representing 50.2 % of the sample prefers kinesthetic learning style; 768 (42.1 %) preferred learning by visual, while only 140 (7.7%) preferred learning by auditory. Of the 925 males 62.4% preferred learning using kinesthetic style while only 7.1% like to use auditory learning style. 486 females (54.1%) out of 899 preferred learning sexuality education with visual style while only 74(8.2%) preferred learning by auditory. Students learning style also differs by school location (rural, urban and semi-urban). The researchers concluded that irrespective of gender and school location majority of students in Benue state secondary schools preferred to learn sexuality education using kinesthetic style. This finding underscores the need for teachers of FLHE to diversify their delivery methods to suit all types of learners.

**Keywords** - Adolescents, Benue State, Learning Style, Sexuality Education

## I. INTRODUCTION

Regardless of course of study, subject content or level of study, many factors have been documented to influence learning outcomes either positively or negatively. One of such factors is the student's consistent way of responding to and using stimuli in the context of learning otherwise known as learning style. The new paradigm shift from system, content, and mastery oriented education to the learner, process, and skills oriented type brought learning styles instruction into limelight in the past one decade. It has gained influence and has enjoyed wide acceptance among educators at all levels, parents, and the general public. The term "learning styles" connotes that every student learns differently. Technically, an individual's learning style refers to the preferential way in which the student absorbs processes, comprehends and retains information. Reference [1] describes learning styles as how an individual approaches a range of tasks "categorized in different ways: visual/auditory/kinaesthetic ,impulsive/ reflective, right brain/left brain, etc. Reference [2] opines that learning styles is a range of competing and contested theories that aim to account for differences in individuals' learning. Reference [3] added that Individual learning styles depend on cognitive, emotional and environmental factors, as well as

one's prior experience. Proponents recommend that teachers assess the learning styles of their students and adapt their classroom methods to best fit each student's learning style [4].

The theoretical frameworks for understanding the concept of learning style have been proposed in literature by scholars such as [5]-[9]. This study is anchored on [8] VARK model. Neil Fleming expanded upon earlier notions of sensory modalities of Barbe and colleagues and proposed learning styles based on four sensory modalities, namely; visual, auditory, read/write and Kinesthetic learning. Fleming claimed that visual learners have a preference for seeing (visual aids that represent ideas using methods other than words, such as graphs, charts, diagrams, symbols, etc.). Likewise auditory learners best learn through listening (lectures, discussions, tapes, etc.), and tactile/kinesthetic learners prefer to learn via experience—moving, touching, and doing (active exploration of the world). Though learning style theories have been criticized by psychologists and neuroscientists who questioned the scientific basis for separating students based on learning style, there is abundant evidence that optimal instruction requires diagnosing individuals' learning style and tailoring instruction accordingly. A 2014 survey reported that 76% of UK school teachers 'used Learning Styles' and most stated that to do so benefit their pupils in some way [10]. A study of Higher Education faculty in the USA showed that 64% agreed with the statement "Does teaching to a student's learning style enhance learning?" [11]. A recent study also shows that overwhelmingly teachers endorsed the use of learning style [12]. There is plethora of studies on learning style however, despite the popularity of some of these studies they suffer from methodological problems such as (1) lack of underlying theory, (2) proliferation of measuring

instruments, (3) inappropriate research designs, and (4) lack of internal validity. These problems have led to an accumulation of conflicting results in several areas of learning style research. For example, [13] investigated the effects of learning styles and instructional strategies on students' achievement in physics. A purposive sampling technique was used to select 250 students who participated in the study. The results showed that guided discovery is the most effective instructional strategy for physics students with sensing/intuitive learning style while active/reflective learning style was placed second in the order of facilitating students' achievement in physics. The major flaw in the study [13] is the use of non-random sample otherwise known as judgemental sample. Using samples drawn in this form leads to a serious risk of badly biased samples as such conclusions drawn from such studies raise the concern for internal validity.

Similarly, [14] explored whether learning style — as measured by the Kolb's learning style inventory (version

3.1) could have an impact on students' foreign language achievement. The sample of the study was 123 Iranian female EFL learners at Zaban Saraa language institute. The result showed that dominant learning style preference was converging (62.60%), followed by assimilating (17.89%), accommodating (11.38%) and diverging (8.13%). While the outcome of the study has implication for educators it has a weakness of relying on Kolb's learning style inventory for data collection. A 2013 study suggests that Kolb's learning style inventory "possesses serious weaknesses" [15].

Recently, [16] investigated the relationship between learning styles on the achievement of English as a Foreign Language at the tertiary level. Result showed that the most preferred learning styles was the auditory style followed by kinesthetic style and lastly by visual style. Reference [2] explored the effects of learning styles and gender on the performance scores of undergraduate students in three successive academic years. Results of the study indicate a non-significant difference of learning style and gender in all groups. The study concludes that instructors should use a learning strategy matching with the style of each learner in different majors of management opted by the students. While the studies by [2], [16] were well conceptualised and executed a major gap is that the researchers were interested in students' achievements in subject areas other than sexuality education. There is thus paucity of researches on students' preferred learning style on school based sexuality education in Nigeria and in Benue State in particular despite the fact that sexuality education is the cornerstone for the protection of adolescents who continue to bear disproportionately high burden of reproductive health challenges globally. It therefore, becomes imperative

to examine students' preferred learning style in sexuality education among students in Benue State Secondary Schools. Evidence suggests that adolescents require additional support in obtaining knowledge, skills and behaviours that has likelihood of promoting healthy sexual development. For instance, an analysis of data from the 2011 National Youth Risk Behaviour Survey found that nearly 50% of the 35.3 million people living with HIV acquired infection before the age of 25 years through sexual transmission [17]. Similarly, the 2012 HIV statistics in Nigeria showed that approximately 20% of males and 37% of females 10 – 19 years old had commenced sexual intercourse [18]. In effect, adolescents in Nigeria do show evidence of early sex initiation [18]. The data also revealed that 56.4% of sexually active boys and 39.6% of sexually active girls had had unprotected sex with non-marital sexual partners in the last 12 months of a survey. The proportion of adolescents who engage in this high risk sexual behaviour was higher than what was observed in other age groups. Other high risk behaviours among adolescents include transactional sex, multiple sex partnership, age mixing of sexual partners – are on the increase among adolescents in Nigeria [18]. Reference [19] corroborated this finding when he reported that irrespective of level of class, gender or school type risky sexual behaviours are dominant among secondary students in Benue state. Traditionally, adolescents in many cultures are not given any information on sexual matters, due to lack of skill [20] and fear of reactions from religious and cultural groups [21].

It was against this backdrop of risky sexual behaviours and gap in sex education among adolescents that necessitated the National Council on Education to approve the implementation of Family Life and HIV Education (FLHE) in Nigerian schools during its 49th Council meeting in 2002 in order to bridge the lacuna. It was believed that targeting upper primary and secondary school students with HIV prevention information would empower children and adolescents with prevention information and life skills therefore provide window of opportunity for the reversal of the spread of the virus [22]. Reference [23] define sex education as "involving a comprehensive course of action by the school, calculated to equip young people with the knowledge, skills, attitudes and values they need to determine and enjoy their sexuality – physically and emotionally, individually and in relationships' Supporting evidence suggests that comprehensive school based sex education appears to decrease the rates of unintended pregnancies [24], reductions in the risky behaviours as well as reductions in unintended pregnancies and STIs [25].

## II. STATEMENT OF THE PROBLEM

A baseline study conducted by the researchers using randomly selected in-school adolescents in Benue

state revealed low level of HIV/AIDS knowledge and its prevention methods. In addition, knowledge of other STIs, their health effects, and treatments were also low. There is also somewhat poor understanding of personal risk of contracting HIV which has implications for rapid spread of HIV as well as high incidence of unwanted pregnancy. This finding justifies the high HIV and AIDS recorded for Benue state in 2012 HIV sentinel survey. According to the NARHS the state ranked nine (5.6%) out of the 36 states and FCT in Nigeria [18].

These figures raise concern about the implementation of sexuality education in the state since 2003. It is assumed that with sexuality education the students' knowledge of STIs including HIV will improve, their attitude towards risky behaviours would be modified and their skills to resist unhealthy sexual practices would be strengthened. Previous studies have attributed students' poor performance in school based subjects to the learners, school and government factors, few studies have examined the students' preferred learning style. In attempt to provide data that will impact on pedagogy, this study was designed. This is in order to prevent mismatch between the students preferred learning styles and the instructional strategies used by the teacher. Without an in-depth understanding of how student absorbs, processes, comprehends and retains information all pedagogical efforts will yield minimum dividend. Given the paucity of study on this field of study, this research was conceptualized as an attempt to extend the frontiers of knowledge in learning style and sexuality education. Undoubtedly, the empirical data will provide insight to programming for in school adolescent reproductive health interventions.

### Research Questions

The following research questions guided the study

1. What is students most preferred style of learning sexuality education among students in secondary schools in Benue state?
2. Does students' preferred learning style differ on the basis of gender?
3. What is the students preferred style by school location?

## III. MATERIALS AND METHODS

### 3.1 Study Design

The blueprint for conducting this study is survey research design. This is because the researchers specifically collected information relating to the variable of study as reported by individuals. This method was considered most suitable because the researchers were merely interested in the occurrence of the phenomena and not on cause and effect which requires manipulation of the variable of study.

### 3.2 Sampling Technique and Sample

Stratified Sampling technique was adopted for the study. Benue state is categorised into three groups according to the settlement pattern and urbanization. The first group consists of LGAs with a population of 80,000 to 500,000 people. These include Makurdi, the State Capital, Gboko and Otukpo. The second group comprises towns with a population of between 20,000 and 50,000 people and includes Katsina-Ala, Zaki-Biam and Adikpo, Kwando. The third category comprises towns with a population of 10,000 to 19,000 people and includes Vandeikya, Lessel, Ighu, Naka, Adoka, Aliade, Okpoga, Igumale, Oju, Utonkon, Ugbokolo, Wannune, Ugbokpo, Otukpa, Ugba and Korinya. Makurdi, Zaki-Biam and Vandeikya selected through random sampling technique formed the first strata. The second strata consists of fifteen schools categorized according to ownership namely; Federal, state and Private secondary schools. The third strata were made up of students from the three levels of senior secondary schools selected from nine schools that met the inclusion criteria. In all, a representative sample of one thousand eight hundred and twenty-four (1824) made up of 925 (50.1%) males and 899 (49.3%) female were drawn from an approximate population of 10,360 students spread across the three senatorial zones in schools in Benue state. For the purpose of this study schools from the state is labelled urban, semi-urban and rural settlements based on the population sizes earlier discussed.

### 3.3 Measures

#### Learning Style Scale

The Barsch's Learning Style Inventory (BLSI) developed by [26], was used to identify the preferred learning style of the students. The instrument has items on visual (V), auditory (A) and kinesthetic (K). It is a 25 item self-report questionnaire originally anchored on five scale of Likert format 1=Does not correspond at all; 2= Corresponds a little; 3= Corresponds moderately; 4= Corresponds a lot; 5= Corresponds exactly. However, since the researchers were merely interested in categorising students according to their learning styles, the instrument response pattern was redesigned to supply yes or no responses. The statements are positively worded. Typical items on the scale includes; "I prefer to see information written on a chalkboard and supplemented by visual aids and assigned readings"; "I can remember best by writing things down several times" BLSI is simple and convenient to respond and takes approximately 10-15 minutes to complete. The students selected the description/statement that suit them and tick 'yes' or 'no' to statements. Studies conducted in other countries show that the instrument is reliable [27]-[28]. Similarly, [29] reported that it was reliable to identify learning styles of India students. In Nigeria, [30] reported a Correlation Coefficient of 0.72 when they utilized it on students

in Enugu State, Nigeria. For the purpose of this study it was revalidated during pilot study and the coefficient of reliability obtained was  $\alpha=0.72$  using Cronbach's alpha. This score provided evidence that the instrument is reliable to measure learning style since it is higher than 0.65 recommended by methodologists.

### 3.4. Procedures

Prior to the commencement of the study, the protocol of the study was presented to Benue State Ministry Of Education Science And Technology located at 1 Ahmadu Bello Way Adjacent Benue Hotel Old GRA, Makurdi, Benue and the officer in charged approved the study provided it would not be altered. Thereafter, the researchers along with two research assistants trained in a similar project conducted a year ago approached the principals of the schools with mandate from their supervising unit. Out of the fifteen randomly selected schools, only nine which met the inclusion criteria participated in the study. The three eligibility criteria are as follows;

- Evidence of teaching sexuality or family life HIV education
- Availability of FLHE curriculum
- Presence of trained FLHE teachers

At each school, the study purpose was discussed by the researchers. The students were assured of the confidentiality of their responses. In addition, the questionnaire did not contain information regarding their name, or contact address. To ensure volunteerism in participation, the researchers announced that those who are not interested to participate could opt out of the study. Thereafter, only students who remained in each locations school hall were given the questionnaire. Response time was 15 minutes. The questionnaire return rate was high (98%). This feat may not be unconnected with the fact that only one questionnaire with 25 items of yes or no responses was distributed in the conducive hall.

### 3.5 Data Analysis

The data collected from the respondents was analysed using descriptive statistics. This statistical tool was considered most appropriate to describe and explain the features of the data set, by giving short summaries about the sample and measures of the data. Specifically, it was adopted to calculate the mean, age range, standard deviation of the study sample. It was also utilized to categorize the students responses according to their learning preferred styled.

### 3.6 Ethical Clearance

The institutional clearance for this study was obtained from Benue State Ministry of Education Science And Technology prior to commencement. In addition, the School Principals gave their consents. Only students who volunteered to participate in the study were recruited and option to opt out if dissatisfied was provided. For purpose of anonymity and confidentiality, the questionnaire was code and

information relating to names, phone number and address was not included on the bio data section of the questionnaire.

## IV. RESULTS

### 4.1 Demographic Profile of Respondents

The analysed data using descriptive statistics reveals that majority of the respondents were male 925 (50.1%) of the total population of 1824 respondents when compared with their female counterpart 899 (49.3%). Further, Finding showcased that ages 12-14 years has 239 (3.1%) of the total respondents; 15-17 years of age constituted majority 927 (50.8 %) out of the total population while between 17 years and above 658 (36.1%) of the total population. Distribution of respondents according to religious affiliations revealed that majority of the respondents were Christians 1262 (69.2%); 452 representing (24.8 %) of the total population in the study were Muslims. Other unclassified religion including traditionists was only 110 (6.0 %). The students were further segregated on the basis of their school locations. The result obtained showed that 167 (9.2%) were from rural schools; 1121 (61.5%) were selected from the urban settlements while 536 representing 29.4 % of the study population were from semi-urban.

### 4.2 Research Question One: What is the most preferred style of learning sexuality education among students in secondary schools in Benue state?

Table 1 shows the learning styles which the students preferred to be taught sexuality education according to VAK arrangement. The result shows that of the 1824 students 768 representing 42 % of the population prefers to learn by visual, while only 140 (8 %) preferred to learn by auditory. Finally, of the total sample, majority of the students (916) representing 50 % of the total population prefers to learn sexuality education using kinesthetic learning style. Similarly, pie chart presented on figure 1 was used to depict the picture of the students' preferred learning style. It is obvious from the pie chart that the most preferred learning style is kinesthetic. The implication of this finding is that 50% of the 1824 students utilized for the study would prefer to manipulate or touch materials during the teaching of sexuality education. Simply put, majority of the students will prefer to carry out physical activities, rather than listening to a lecture or watching demonstrations while learning sexuality education.

**Table 1: Students preferred learning style based on Fleming (2006) classification**

S/N	Types of learning style	No. of students	Percentage (%)
1	Visual (V)	768	42
2	Auditory (A)	140	8
3	kinesthetic(K)	916	50

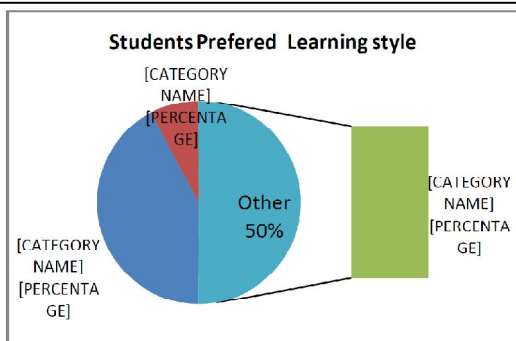


Fig 1: Students’ preferred learning style

**4.3 Research Question Two: What is students’ preferred learning style on the basis of gender?**

With respect to gender, the results presented using table 2 and figure 2 show that of the 925 male that participated in the study, 577 representing (62.4%) preferred to learn sexuality education using kinesthetic style, while the least preferred style was auditory as only 66 students ( 7.1% ) like to study using auditory learning style. On the contrary, 486 students (54.1%) of the female population of 899 will prefer to learn sexuality education using visual style while only 74(8.2%) out of the female population preferred learning by auditory. The implications of this finding are that the female will prefer to learn via two sub-channels namely; linguistic and spatial. Such learners are said to either visual-linguistic or visual-spatial. cursory look at the table shows that auditory method was the least prefer method for both male and female. The implication is that neither male nor female will like to learn sexuality education by just listening to teachers.

Table 2: Students Preferred Learning Style by Gender

S/N	Learning Style	Male	Female	Total
1	Visual	282 (30.5%)	486 (54.1%)	768
2	Auditory	66 (7.1%)	74 (8.2%)	140
3	kinaesthetic	577 (62.4%)	339 (37.7%)	916
Total		925 (100%)	899 (100%)	1824

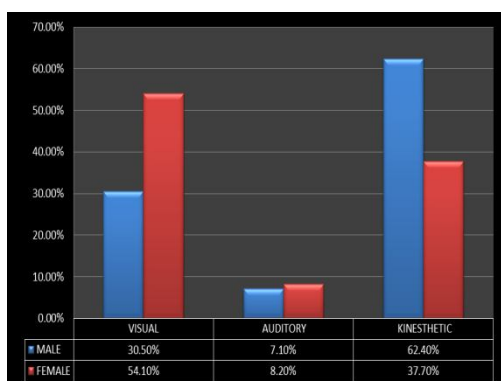


Fig2: bar chart showing students preferred learning style by gender.

**Research Question Three: What is the students preferred style by school location (rural, urban and semi-urban)?**

The result of research question 3 is presented on table 3 and figure 3. It reveals that 46 students (27.5%) from schools located in the rural areas prefers to learn using visual style, while 43 (25.7%) will prefers to learn using auditory learning style, finally, 78 (46.7%) prefers to learn using kinesthetic. On the other hand, 490 (43.7%) students from urban settlements prefers to learning using visual style, 276 (24.6) likes to learn with auditory, while 355 students representing 31.7% of the students population likes to learn using kinesthetic style. In addition, 226 students representing 42.1% likes to use visual learning style while 65 (12.1%) prefers to learn with auditory style. Finally, 245 students representing 45.7% of students population likes to learn using kinaesthetic modality.

Table 3: Students Preferred learning style on the basis of school Location

S/N	Learning style	Rural	urban	Semi-Urban
1	Visual	46	490	226
2	Auditory	43	276	65
3	Kinesthetic	78	355	245

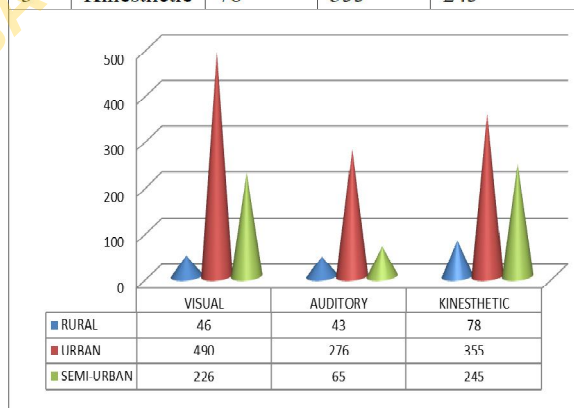


Fig3: Bar Chart Showing the Students Preferred learning style on the Basis of school Location

**DISCUSSION**

This study examined students preferred style of learning sexual and reproductive health education in Benue State Secondary Schools. It was conceptualised on the assumption that when teachers adopt teaching methods to suit how learners prefer to process, absorb and retain reproductive health information it could perhaps contribute to mitigating contracting sexually transmitted infections (STIs) including HIV/AIDS, prevent unwanted pregnancies and other negative outcomes of health compromising behaviours. Result of the first research question reveal that majority of the students (50.2%) preferred kinesthetic learning style. The implication of this finding is that teachers should incorporate multimedia

resources (computer, video camera, OHP transparencies, photography camera, etc.) into teaching of sexuality education. In addition, the teachers can stimulate the students tactile sensory modalities by using demonstrations, dancing, role-play and possibly visits some centers caring for PLHIV, Network of People Living with HIV and AIDS in Nigeria (NEPWHAN) as a means of reinforcing that HIV is real. This finding contradicted [31] who reported that Iranian students used for his study preferred visual learning style. However, the outcome corroborated [32] who found that even though the majority (61%) of the students in their study had multimodal VARK preferences that the most common unimodal preference was kinaesthetic. Similarly, [33] also reported that 37 % of the sample used in their study preferred Kinaesthetic learning style. The outcome is very encouraging from pedagogical point of view. For instance, students with kinesthetic learning style are said to have tendency to learn permanently because their memories are associated with their emotions such as excitement, curiosity, anger, disappointment and success [32], [34]. The result of the second research question showed gender difference in students preferred learning style. The results showed that while majority (62.4%) out of 925 male that participated in the study preferred to learn sexuality education using kinaesthetic style, while majority (54.1%) of the female preferred learning using visual style. This outcome corroborated that of [35] who reported that majority of male students used in their study preferred kinaesthetic learning whereas majority of female students preferred visual. The possible explanation for the gender difference in the preferred learning style could be found in the result of a study which showed that male and female brains are physiologically different, and these differences affect most of the learning processes. They argue that females "use more cortical areas for more learning functions while the male brain lateralizes (compartmentalizes) their learning." [36].

Result from the third research question shows that students differ on their learning style preferences on the basis of school location. The results presented on table 3 shows that majority of the students in rural areas preferred to learn using kinaesthetic style; while auditory learning style dominants in the urban areas. In the semi-urban areas there is no significant difference in the students' preferred learning style since 226 and 245 preferred to learn by visual and kinaesthetic respectively. The finding supported [37] who found learners in rural to be significantly higher in the serious, analytical and active, practical Learner characteristics than their urban counterparts. It is also in tandem with [38] recent findings that there is significant difference in preferred learning strategies of urban and rural school students' rural school students in Nepal. However, unlike in our study where rural students preferred kinaesthetic most, in

[38] study, students in rural settings preferred auditory (Elaboration and organization strategies) than urban school students. This outcome may perhaps be as a result of [39] observations that urban students seem to have more inclination towards the adoption of dependent, collaborative and participant learning styles than rural students.

## CONCLUSION

Since identifying the students learning style and aligning the overall instructional strategies with these learning styles has proven to be beneficial for students performance in all learning context. The findings of the study underscores the urgent need for teachers to teaching methods to suit different learning styles found in a classroom. Adopting learner centered approach to teaching sexuality and reproductive health will no doubt improve students' knowledge of sexually transmitted infections and strengthen their life skills to resist pressures to engage on risky health compromising behaviours.

## RECOMMENDATIONS

Based on the strength of the study findings the researchers recommend that

- Teachers should assess the students learning style to identify what suits them style to ensure that instructions are conducted according to the learner's style and not that of the teacher. One of the means of obtaining insight into students learning style is using Solomon/Felder learning style questionnaire.
- Teachers can differentiate instruction while teaching sexuality education. They can utilize group discussions, role plays, drama, field trips etc as a means of differentiating the teaching process. It is documented that these activities helps students' process information in a different way in order to fully consolidate the information.
- Teachers can also use computer Assisted Instructions (CAI) to stimulate several students modalities
- Teachers should also be gender sensitive in the selection of teaching styles to suit male and female while teaching sexuality education.
- The location of the students school should be considered when selecting a teaching method as this will enable the teacher to interject different instructional methods.

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