

SEXUALITY EDUCATION: A WAY FORWARD TOWARDS ENHANCED BIOLOGY CURRICULUM DELIVERY

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ABSTRACT

Equipping individuals with sex-related information, motivation and behavioral skills is the main objective of sexuality education. It will enable the people especially the youth to avoid problems related to sexuality and to achieve sexual well-being aspects. This study aimed to evaluate the effectiveness of sexuality education integration in Grade 10 Biology instruction in relation to student's performance at Pinamungajan National High School. Quantitative and qualitative designs were used to determine the entry and exit knowledge of the students on sexuality education, looked into the pre and post-test performance of the students, the pre-post mean gain in integrating sexuality education, the module that was developed used for effective integration and the challenges met by the teacher in integrating sexuality education. The study was limited only to the Grade 10 students because reproductive system is being taught in Biology 10 instruction and it's a good avenue for sexuality education integration. The study found out that the students have less prior knowledge about the cause and effect of sexual transmitted disease Human Immunodeficiency Virus and risks of early sexual activity. Teachers have low extent in integrating topics such as teenage pregnancy and HIV spread that's why students got low level of awareness in the pre-test. With the use of a researcher-made module in integrating sexuality education in reproductive system, the level of student's awareness towards the cause and effects of early sexual activity and HIV spread increases for there was a significant difference between the pre-test and post-test mean gain of the students. Despite the challenges appeared upon integrating sexuality education, the researcher found it as a strength for it helps the students increase their self-efficacy especially in dealing with sexuality. The result of the evaluation of the integration indicates that sexuality education is a way forward towards enhanced Biology Curriculum Delivery. Since teenage pregnancy and HIV spread is rapidly increasing, there is a need now that teachers should start integrating sexuality education emphasizing teenage pregnancy and HIV spread to the students. This is one good intervention in delaying sexual activity, preventing them from the effects or risks caused by early sexual activity, help restore their values thus increase their self-efficacy towards decision making.

Key Words: *sexuality education, challenges, integration, curriculum, delivery*

Rationale

The formation of Christianity in the Philippines started during the Spanish regime. Since then, Roman Catholicism became the religion of most Filipinos and like other religions; it also became the basis of morality in the society. Sex before marriage is one of the things that is considered immoral among Filipinos. Thus a young woman must keep herself chaste and pure for virginity is the greatest gift a woman can give to her husband. However considering the change we have right now such as programs shown nowadays in the media and the what we call "freedom-loving" generation, it seems that virginity is no longer an important virtue.

There is no doubt that media has a tremendous capacity to teach different from standard techniques, whether through televisions or computers but excessive media use, particularly where the content is sexually explicit skews the child's world view, increases high risk behaviors and alter his or her capacity for successful, sustained human relationships (Villani, 2001). The increase change that the advent of technology brings, also increase the number of premarital sex and its effects not only in the Philippines but also in the world. These changes should also trigger the increase of intervention programs that gives awareness about the effects brought by early sexual activity to the people especially the young.

According to Lloyd (2005), there is an increase number of young people to have sex before marriage most especially in many developing countries thus premarital pregnancy rates and HIV rates are increasing. Teenage pregnancy is a significant problem for it placed a number of the overall weight of disease due to early childbirth. According to Chantrapanichkul et al. (2013), pregnancy carries high risk of negative outcomes especially when the woman is at younger age.

The National Demographic and Health Survey (NDHS) (2013), reveals that in the Philippines, one in ten Filipino women is bearing a child at the age of 15 and 19 and some of them are already mothers. It also reveals that one in five Filipino women had engaged their sexual activity not later than 18. National Youth Assessment study (2010) showed that there is a high incidence of early sexual activity involves the 15-17 age groups. Moreover, the National Statistics Office (NSO) had records of high number of maternal deaths from 2001 until 2010. There were also 736

HIV Ab seropositive individuals reported to HIV/AIDS and Art Registry of the Philippines (HARP, 2016). This was higher compared to the same period last year.

In Central Visayas, a nine-year old girl in Cebu became the youngest mother after she gave birth last 2015 at the Vicente Sotto Memorial Medical Center (VSMMC). A 12-year old girl from Bogu City who gave birth after being identified by the regional population commission (Pop-Com-7) last 2014. PopCom-7 director Bruce Ragas said the rise in early pregnancy rates in Cebu is alarming, Ragas also added that with this rate, they are helping the Department of Education in implementing sex education in schools (Padayhag, 2015). Central Visayas, ranks sixth in the country where 2.7% are males and 1.3% are females engage in sexual intercourse before age 15 as based on PopCom-7 last 2013. In Region VII, there were 71 cases HIV Ab seropositive individuals reported to HIV/AIDS and Art Registry of the Philippines (HARP) and that accounts 10% of the total overall HIV/AIDS burden in the country. Moreover, Region VII ranked fourth with the highest percentage of HIV cases in the country.

A barangay school in the municipality of Pinamungajan (Lamac National High School) where the researcher was previously assigned had high cases on teenage pregnancy in school year 2014-2015. There were approximately ten teenage girls' ages 15-16 got pregnant, seven of them dropped out from school and two of them graduated with bumpy tummies. Another school in Pinamungajan (Pinamungajan NHS) which is the current teaching station of the researcher has also recorded cases of teenage pregnancy every year. According to Mrs. Bernadeth Atil Health in Charge, in the Municipality of Pinamungajan alone, there were approximately 150 recorded teenage pregnancies in the municipality, year 2015-2016 and these young individuals are also at STD risks such as HIV.

Teenage pregnancy and HIV/STD are issues that need urgent intervention especially now that the country is already adapting the K-12 curriculum wherein students still need to take another 2 years to graduate in high school. Due to the increased risks brought by early childbearing and HIV spread, there is now a need to understand the situation to plan appropriate interventions. We have been very silent for the past years about the issues on teenage pregnancy and HIV spread and it's now time to take actions to lessen the problem caused by early sexual activity. Sexuality education could be a great help for it can play a major role in helping teenagers to restore their values and make healthy and responsible decisions. Since Sexuality Education is not yet part of the curriculum; the researcher wants to integrate it to subject relevant to it to give awareness to students about the effects of premarital sex.

The purpose of this study is to determine the awareness level of students towards teenage pregnancy and HIV illness and evaluate the effectiveness of Sexuality Education Integration in Biology topics such as Reproductive System for it will provide information about the effects of early sexual activity including HIV spread. Sexuality Education integration focuses on the negative effects of early sexual activity and how these effects destroy the overall well-being. It will also provide the students the information and skills they need to delay sexual activity, increase self-efficacy through values restoration, raise their morale and engage in mutually respectful relationships.

Conceptual – Theoretical Framework of the Study

Social Learning theories gives significant recognition for youth gain information and understanding directly through education or indirectly through observation of other's behavior. According to Bella (2013), Social Learning theory can be applied to sexuality education in the Philippines as a prevention-based tool especially if its gender-based. The One goal of sexuality education is to change one's behavior and the inclusion of it in the Filipino school curriculum will expose the children to different angle on sexuality, one prevention and healthy relationships between genders. Bella also added that through Social learning theory gender-based sexuality education, Filipino youngsters will be much better equipped to deal with reality such as HIV and pregnancy preventions.

This study is underpinned from Republic Act 10354 series of 2012, otherwise known as the Responsible Parenthood and Reproductive Health Act of 2012. The underlying principles of this law relevant to this study are based from the premise that it's the policy of the State to (a) to recognize and guarantees the human rights of all persons including their right to equality and nondiscrimination of these rights, the right to sustainable human development, the right to health which includes reproductive health, the right to education and information and the right to choose and make decisions for themselves in accordance with their religious convictions, ethics, cultural beliefs and the demands of responsible parenthood. It is stipulated in Section 3, The Guiding Principles for Implementation: The State shall promote programs to ensure partnership among national government, local government units (LGU's) and the private sector in the design, implementation, coordination, integration, monitoring and evaluation of people centered programs to enhance the quality of life and environmental protection. Since Department of Education is one trusted government agency to design, implement, integrate, monitor and evaluate programs such as sexuality education. Sexuality education ensures enhancement of the quality of life and protection.

The main theory that supports this study is the critical theory by Horkheimer (1982). This theory has three criteria to meet to be adequate and these criteria must be explanatory, practical and normative, all at the same time. Thus, it must explain what is wrong with current social reality, identify the actors to change it and provide both clear rules for criticism and smart practical goals for transformation. Critical theory is effective theory for intervention since it involves transformation. The effects of teenage pregnancy and HIV spread will be explained through integrating it to subjects like Biology. The young individuals are the actors to change the existing problem and the educators are good channels for their transformation. The teacher-student interaction towards the problem will provide clear norms for criticism and achievable practical goals for social transformation.

People learn from one another through observation, imitation and modeling can be explained through Social Cognitive theory (Bandura, 1986). This theory can be applied to sexual health education in several ways resulting positive outcomes such as higher levels of self-efficacy in students' decision making (Dilorio et al. 2006). Students tend to learn through observations, imitation and modeling. This can be achieved through classroom activities such as role play and this can be played based on their observations in the society. Through role plays, students could imitate on the things they observed especially the effects brought by early childbearing. Through this, students could deliberately reflect that will result to a positive outcome and that is to increase their self-efficacy especially in decision making towards sexuality.

Transtheoretical Model is another theory that has basis for good interventions (Hacker et al. 2005). This model considers behavior change as a process rather than an isolated event. This model emphasizes that individuals involve in behavior change should follow certain stages; the precontemplation stage, the contemplation stage; preparation stage, action stage and maintenance stage (Prochaska et al. 1997). Change of perspective does not happen in a second especially when it comes to one's behavior. A person needs a process to achieve a change in behavior. In precontemplation stage, a problem behavior that needs to be changed is not yet recognized by the person. Teenage pregnancy and HIV illness are problems that were not acknowledge before until they became serious and severe nowadays. The increase rate of teenage pregnancy and HIV spread are indications of negligence for these were given less priority. In contemplation, a person recognizes that there is a problem but not yet ready to make change. When a person realizes that teenage pregnancy and HIV spread brings illness to the society, they found it hard to look for interventions. In preparation stage, a person is getting ready to change if a person is inflicted with information about the risks brought by too early sexual activity. Then changing behavior in action stage in which an increase of self-efficacy in person's decision making especially in dealing with sexuality is evident. After which, is the maintaining the behavior change. If a person is given appropriate interventions, it will lead him or her to avoid himself or herself from engaging early sexual activity thus low chance of getting pregnant and acquiring HIV. Transtheoretical method is good for effective intervention especially in giving awareness to students about the effects of early sexual activity. Students will be more informed and educated about the negative outcomes of their behavior and will spend time reflecting about their problem, make a commitment to maintain the changed behavior.

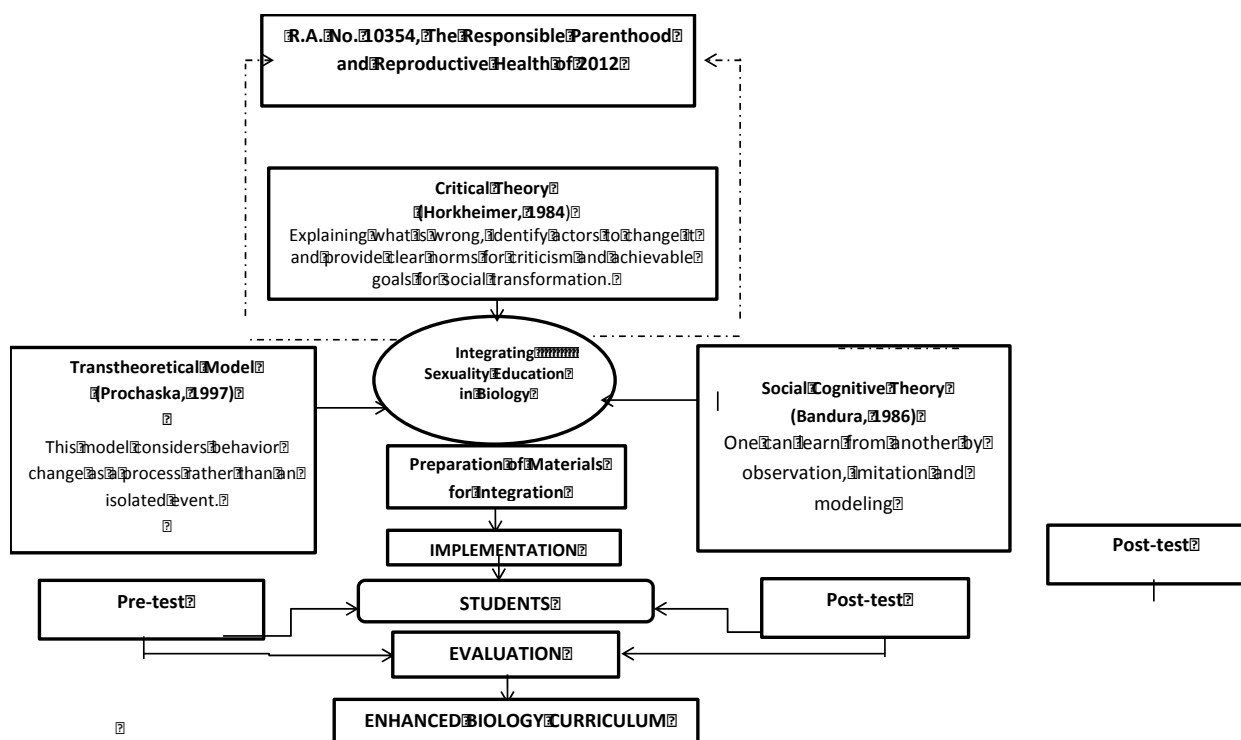


Figure 1. Schematic Diagram of the Conceptual & Theoretical Framework of the Study

Statement of the Problem

This study aims to evaluate the integration of Sexuality Education in Grade 10 – Biology Instruction.

Specifically, it seeks to answer the following questions:

1. What is the student's entry knowledge on sexuality education?
2. What is the student's exit knowledge on sexuality education?
3. Is there a significant difference between pre-test and post-test results?
4. What are the challenges in integrating sexuality education in Biology?
5. What enhanced module will be developed in integrating sexuality education?

Review of Related Literature and Studies

Integrating Sexuality Education Sector of the Philippines

Republic Act No. 10354, otherwise known as The Responsible Parenthood and Reproductive Health Act of 2012 pertain the implementation of sexuality information among national government, local government units (LGU's) and the private sector. It is stipulated in Section 3, The Guiding Principles for Implementation: The State shall promote programs to ensure partnership among national government, local government units (LGU's) and the private sector in the designing, implementing, coordinating, integrating, monitoring and evaluating people centered programs to enhance the quality of life and for the protection of the environment. Lifelong learning process of giving relevant-age information and education on sexuality is how sexuality education is being defined under this law.

Education on reproductive health has been taught in the basic education under K-12 program. Learners age seven and younger were taught about the different touché (good and bad) for these age groups are more susceptible to abuse and exploitation. The education department said the move to have sexuality education in accordance with the law that mandates the right to health and education for adolescents (Mateo, 2016). The DepEd stressed out that sexuality education is not about the sex thing, but more on the importance of reproduction, bodily care and hygiene, appropriate values and actions towards one another to avoid early sexual encounter (Gines, 2016).

Philippines Teenage Pregnancy, HIV and Health Related Risk Profile

There were 736 new HIV Ab seropositive individuals reported to HIV/AIDS and Art Registry of the Philippines (HARP) last March 2016. Department of Health (DOH) reveals that this was 10% higher compared to the same period last year wherein there were 667 HIV victims. Most of the 97% were males; more than half belong to the 25-34 year age group while 27% were youth aged 15-24 years. The regions with the highest number of reported cases for March 2016 were National Capital Region (NCR) with 284 (39%) cases, Region 4A with 94 (13%) cases, Region 3 with 82 (11%) cases, Region 7 with 71 (10%) cases and Region 11 with 9% cases. One hundred forty (19%) cases come from the rest of the country. Sexual contact (709), needle sharing among injecting drug users (IDU) and mother to child transmission were the reported modes of transmission (MOT). Eighty six percent (80%) of those transmitted through sexual contact were among males who have sex with males. A report from the Department of Social Welfare and Development (DSWD) shows that there had been high incidence of teenage pregnancies wherein the youngest recorded mother was a 13-year old girl. This triggers the DSWD to conduct Youth Development Session to address the alarming increase of teenage pregnancies. They want to impart to the young women, particularly those in the high school bracket ages the effects of premarital sex and early childbearing. The 2013 Young Adult Fertility and Sexuality Study (YAFFS) revealed that the occurrence premarital sex has been increasing in the last two decades. Percent of youth who have engaged in premarital sex for males; from 31.2% in 2002 to 35.5% in 2013 for females; from 16% in 2002 to 28.7% in 2013. NCR, Region 3 and 11 are regions with high occurrence of premarital sex with 15-19 age groups. There are sexual behaviors specific to males; 5.3% of male youth had sex with another and 4.2% of male youth have engaged in anal sex. CAR, Region 2 and NCR are the regions with high prevalence of early childbearing. It is very clear that the percentage of early childbearing has been increasing for years. Teenage childbearing has sharply increased, likely as a result of higher premarital sexual activity, increase in prevalence of early sexual exposure, poor knowledge about reproduction (Natividad, 2013). Teenage pregnancy is prevalent among the poor in the Philippines for two third of the babies were from teenage mothers.

Teenage Pregnancy and Its Health Related Risks

According to Morales (2013), the number of live births by teenage mothers in the Philippines rose by more than 60 percent, a data from the National Statistics Office from 2000 to 2012. An increasing drift of maternal deaths among teenagers is visible just like the latest data from the NSO that there is an increase in maternal deaths among Pinay teenagers. The proportion of maternal deaths doubled from 5% to 10% between 2000 and 2010. Moreover, 168 Filipina mothers under the age of 20 died giving birth, four of them under the age of 15 (Morales, 2013). The commission on population also noted that 8.3% of the total numbers of infant deaths were born to mothers aged below 20 years old. High risks of pre-term delivery, low birth weight and neonatal mortality are possible to teenage childbirth. Teenagers are at increased risks of these for some of them belong to low class society that have no proper prenatal care and low weight gain during their pregnancy (Chen, 2007).

All teenage groups were associated with increased risks for pre-term delivery, low birth weight and neonatal mortality for infants born to teenage mothers aged 17 or younger had a higher risk for low birth weight. Teenage pregnancy increases the risk of adverse birth outcomes and attributable to low socioeconomic status, inadequate prenatal care and inadequate weight gain during pregnancy (Chen, 2007). Series of studies consistently show that teenage mothers are at increased prone to pre-term delivery and low birth weight for it was found out that women below 15 years old were at high risk of maternal death, neonatal death and anemia. Furthermore, they are also prone to postpartum hemorrhage, puerpal endometritis, operative vaginal delivery and small for gestational age infants (Conde et al. 2005). Most teenagers in the US have their first sexual activity around 17 and almost two-thirds have had the experience before graduation from high school. From the time, they begin having sex until they marry, people are at high risk for unintended pregnancies and sexually transmitted diseases (STDs). These sexual behaviors have consequences that in return have lasting effects to the lives of young people. Pregnancy among teenagers can affect their study, their job opportunities and their marital stability and it can surge their dependency. Thus, it is necessary that youth of today to be educated in terms of decision making with regards to sexual activity, from early pregnancies and HIV to grow to be sexual healthy individuals (Nord et al. 1992).

Role of Sexuality Education and its Impact in Foreign Schools

A related study in the Niger Delta shows implications of sexuality education in secondary school Biology Curriculum. The findings of the study show that Nigerian boys and girls engaged in sexual activity not for money but out of curiosity and ignorance hence teenage pregnancy is prevalent in the place. This situation encouraged the teachers, students and parents to include sex education in the Biology Curriculum in Nigeria. According to Salami et al. (2015), there will be more teenage pregnancies if sex education is not included with urgency in the Niger Delta.

According to Iwu et al. (2011), sexuality education is one of the major ways in giving accurate information that helps secondary school students to realize the importance of sex in their lives in a responsible manner thus avoid conditions such as unwanted pregnancies, HIV, prostitution and the like. Sexuality education should be given importance to secondary school curricula to ensure the right to health and education to every individual (Iwu et al. 2011). According to Hall et al. (2011), the United States ranks first in teenage pregnancy and sexually transmitted diseases such as HIV among all developed nations in the world. For this reason, the US government subsidized an abstinence-only sex education programs to decrease the rate of unwanted pregnancies and HIV spread. But since, this state-policy program is ineffective, the government proposed another program which is the comprehensive sex and STD education integration into the biology curriculum. This integration is said to be important to schools most especially the public education or even the community to participate in educating and disseminating information about sex and sex-related issues. In this way, prevention of physical and emotional consequences will become possible and healthy lifestyle, attitudes and values about sexuality will be promoted (Bleakley et al. 2010). Secondary school in Anambra State was become imperative in the inclusion of sex education in Biology curriculum. This is due to the fact that sex education is a way towards helping them in stopping HIV/AIDS spread and sex-related diseases, decrease child mortality and improve the health of every individual especially women, since they believe that all problems are associated with premarital sex such as teenage pregnancy, child abuse, school dropout, premature death and the like (Nwakonobi et al. 2009). According to Ross et al. (2006), a lot of people believe that sex and HIV education program is a prime solution to sex-related problems. Despite the limitations, there is strong evidence of the positive impact of sex education in the curriculum. Moreover, Kirby et al. (2006), states that sex and HIV programs are capable for intervention among youth groups to decrease sex-related risks if well designed and implemented in schools when large number of teenagers are present. In addition, this can also be done in clinics and communities targeting those students who have dropped out of school. According to brewer et al. (2007), most of the people in America agree that sexuality education should be taught in schools and girls should avoid early childbirth until they are self-reliant. They believe that there should a continuous implementation of sex education in schools, communities or even churches for it found to be effective in delaying sexual intercourse among youth (Mueller et al. 2007). According to Clymer (2002), there are forms of sex education in schools that includes reproductive health, sex-related diseases, sexual behavior or even gender issues in most developed countries. This program is practical and structured enough in halting sex-related illnesses and early pregnancies like in Netherlands, France and the United States where youth are encouraged to refrain from doing sex until married. Youth should receive support and information about sexuality, sexual relationships and access to health care services to achieve healthier consequences and decreases the rates of unwanted pregnancy, abortion and even HIV (Gutmacher et al. 2001). Sex education is the most effective way in reducing HIV spread and its risks for its speaks to what is happening in the real set-up than viewing in an ideal world that some people wish to live in (Piot et al. 2001). Dutch schools have typically incorporated sex education in subject areas such as Biology in which teachers are free to determine the materials, methods or even the time to spend their desired objectives rather than enhancing a curriculum or make a subject area towards sex education (Greene et al. 2001).

Teachers have important role in addressing and providing information about sexuality. Since Netherlands is imperative in integrating sex education in their schools, teachers were trained during pre-service trainings. Aside from the provision sex education tuition, Netherlands Institute for Health Promotion and Disease Prevention has been providing teachers for their trainings (HEBS, 2001). To help the teacher in educating the students about sexuality, parents have important roles as well. According to Kalmuss et al. (2000), intervention programs should start at earlier stage, targeting young individuals to prevent them from the increased risk of early sexual activity.

Schools are good avenue for intervention for this is a place frequently attended by most youth. Since schools prioritize students' learning, McKay (2000), states that schools are significant sources of learning especially on providing the learners with the information they need to promote sexual health. According to Kirby et al. (1994), most of the youth come to school before they experience sexual activity and most of them are enrolled before the initiation. Thus, many people believe that schools are institutions that provide opportunities and held responsible in addressing problems related sexuality. Sex education may not the best solution but it will provide appropriate components to reduce sex-related risks and behaviors (Kirby et al. 1994).

Status of Sexuality Education in the Philippines

Sex education has been a topic in debates. There are opposing groups of pro and anti. The Anti-groups usually tells that Sex Education programs triggers curiosity that will only lead to initiate sexual activity, encourage contraceptive use that will contradict to one's beliefs and morals and teachers may not appropriate in teaching it for they lack skills (Eleazar, 2013). According to Lacson et al. (1997), Reproductive Law remains highly controversial because of the Catholic Church's opposition towards reproductive health education. This resulted to the halting of sexuality education in the local school system.

Influence refuse to recognize the importance of reproductive health care is one of the reasons why Philippines remains one of the poorest countries (Baring et al. 2012). According to Padilla (2010), government intervention such as providing reproductive information is the most humane thing the country could do for its poor.

According to Bella (2013) in her study, empowering individual could be one of the most important investments in the Philippines and education is one of the driving forces of development and is essential need in expediting economic growth. Bella also added that implementing Sexuality Education program will solve problems faced by people not only teen pregnancies, early marriages and abortions but also for economic growth.

Misconceptions arise such as young people may have more sex when they learned about sexual education in schools, studies shows that it does not promote sex but instead helps delay sexual activity. Despite the oppositions, National Economic and Development Authority Chief Ernesto Pernia said that the Duterte Administration will go full force in implementing sexuality education to reduce teenage pregnancy and unwanted pregnancies.

Latest report on the implementation of the RH law revealed that the Department of Education (DepEd) has not yet developed the minimum standards required for Comprehensive Sexuality Education (CSE) for there are things that need to be complied (Geronimo, 2016). Though it's not yet reached the standards, the Department of Education (DepEd) is still trying to include CSE in the K-12 curricula.

Teacher's Role on Integrating Sexuality Education

According to Andrade (2016), teaching sex education in school was intended to inform the learners in making appropriate choices and decisions that will probably affect their overall well-being. The teachers especially the guidance counselors should be armed with knowledge and skills to efficiently and effectively handle sex education into subjects. Constructivist teaching techniques such as inquiry-based learning and the like are recognized to be effective in teaching sexual health related education. Cooperative learning technique such as games, role plays, simulations are good strategies in teaching sexuality education for it allow students to work with others and construct meaning from the information as a team. Other techniques involve, small group discussion, student reflection through journal writing, drills, lectures, research and writing assignments (Mccall, 2008). According to Ronny et al. (2007), educators play a significant role in giving information and develop skills related to sexuality.

Research Method

The study used the quantitative and qualitative methods of research. Using a quasi-experimental design, two groups were used for the experimental design and these were determined through a purposive sampling. Both groups were given pre-test and post-test regarding Reproductive System with integration of sexuality education emphasizing the effects of early sexual activity including HIV spread and the ways to prevent it. In this particular study, the teaching strategies and methods inside the classroom were varied. The effectiveness of the intervention was determined qualitatively and quantitatively and compared statistically. The data were from the given pre-test, post-test, and focus group discussion. The average gain scores in the evaluations of both groups in their pre-posttest were compared. The locale of this study was in Pinamungajan National High School (PNHS). Pinamungajan NHS is a public institution located at Pandacan Pinamungajan Cebu, which is situated at the South-western part of Cebu. It is about 1 hour and 48 minutes or 52.5 kilometers from Cebu City via Cebu South road. Pinamungajan NHS has a land area of 19,812 sq. meters. The school has a student population of 2,741 of whom 449 are Grade 10 students. The respondents of the study were the Grade 10 students of Pinamungajan National High School. Using purposive sampling, one hundred Grade 10 students (2 sections) of PNHS, School Year 2016-2017 were used as respondents. They were the chosen respondents of the researcher since Reproductive System is being taught in Biology 10 and it is a good avenue in integrating sexuality education.

Table 1. Number of Respondents and Group of Students

| Group of Students | Male | Female | Total |
|-------------------|------|--------|-------|
| A | 12 | 38 | 50 |
| B | 15 | 35 | 50 |
| Total | 27 | 73 | 100 |

This study used a researcher-made module wherein the topic is focused about the reproductive system and its health related risks. The module was developed vis a vis the K-12 curriculum guide utilized by the Department of Education where the content, content standard, performance standard and set of competencies are reflected. These parts gave the researcher the idea of using active and cooperative learning and teaching techniques such as inquiry-based learning, problem based learning that have become recognized as essential to constructivist learning. The researcher added competencies wherein the learners will be able to learn and understand about the risks of early sexual activity and HIV spread. The researcher gathered reliable sources from books and online journals used as

reading materials found in the module. The lessons are divided into five and each lesson has key concepts, activities and guide questions. The module has a strong emphasis on teenage pregnancy and HIV spread wherein the students learned the causes and were able to reflect on the consequences. The most essential part found in the module is valuing such as the value of chastity, integrity, dignity and the like. The students were reminded that moral values are important for their overall well-being. It provides structure in their lives like governing them in decision making and informed their thoughts, words and actions. The researcher believed that most of the problems that the society is facing right now such as teenage pregnancy and HIV spread are indications of values degradation and negligence and in order to attain sustainable and successful human relationships, values restoration is a must for it generates behavior and help solve common human problems. In the module, a performance task is also reflected wherein students have to do something to share their insights about the risk of early sexual activity to other people especially the youth. This task will help the students realize how serious the problems are nowadays. The researcher adhere that the development of the module is of a great help for effective sexuality education integration (see appendix F).

Another research instrument used was a 50 item multiple choice researcher-made test. This researcher-made test was used in administering the pre and post-test. The items found in it are taken from the discussions of the researcher using the researcher-made module. This researcher-made test was validated and pilot-tested to forty students who were not respondents of the study. Difficulties encountered by the students during the pilot-test were noted and the corrections in the test questionnaires were made after. The reliability of the test was determined using the Split-half formula and Spearman Brown formula. The reliability coefficient was found to be 0.814.

Another research instrument used was a seven- item open-ended questions for the interview. In choosing respondents for the interview, the top two and bottom two were chosen and this was identified after the pre-test scores were tallied. The interview was used to know the respondents' ideas towards sexuality education and their stand about sexuality education being integrated to Biology. After the post - test were tallied, the top two and bottom two were chosen for another interview. They were interviewed about their feelings or reflections towards the activities and discussion done by the researcher. The score for pre-test and post-test were used to solve the average gain scores of respondents to determine their achievement. The statistical treatment used was the T-test of Dependent or Correlated Means at 0.05 level of significance. This tested the difference between two mean scores of a single sample.

Presentation, Analyses Interpretation of Data

The Students' Performance Level During Pre-test

Table 2 summarizes the performance of the students on integrating sexuality education in teaching Reproductive System during the pre-test taken on the first meeting of the third quarter.

Table 2. Performance Level During Pretest

| Group | N | Mean | StDev | Description |
|------------|----|--------|-------|-------------|
| A | 50 | 28.720 | 4.066 | BA |
| B | 50 | 28.080 | 3.691 | BA |
| Difference | 50 | 0.640 | 4.685 | |

T - Value = 0.97

P-Value = 0.339

Table 2 reveals that there is a low mean score in both groups. For the pre-test, the students in both experimental groups had a Below Average performance. The results shown above signifies that the students, actual performance in the pre-test did not come up to the expected mean since they have low prior knowledge on the topics given in the test. According to Hacker et al. (2005), individuals participating in behavior change interventions should be guided through stages; precontemplation, contemplation, preparation, action and maintenance. Change of perspective does not happen in an instant especially when it comes to one's behavior.

The students heard about the Reproductive Health Law in the Philippines through media sources but unfamiliar with its content. They gave the same thought like Reproductive Health Law is all about preventing the increase in population through family control and giving of contraceptives. These rumors give other students the idea of disliking the law since it contradicts their belief especially when it comes to their religion. Where in fact, the Responsible Parenthood and Reproductive Health Act of 2012 recognizes and guarantees the human rights of all persons including their right to equality, the right to sustainable development, the right to health, the right to education and information and the right to choose and make decisions for themselves in accordance with their religious convictions, ethics, cultural beliefs and the demands of responsible parenthood. It's clear that the law emphasizes human rights especially in making decisions in accordance with their beliefs.

The students did attend classes on sexual and reproductive systems but were only taught about the different male and female organs and their functions. Puberty was also discussed but did not encounter discussions about boy-girl relationship. The students wished to attend more classes about these topics to increase their awareness and deepen their knowledge especially on sexual and reproductive system. Though reproduction was taught or mentioned in subjects such as Science, Edukasyong Pagpapahalaga and MAPEH, sexual transmitted diseases (STD) and teenage pregnancy were given less priority. They are less aware about the cause and effect of sexual transmitted diseases such as Human Immunodeficiency Virus (HIV) and the risks of early childbearing. The teachers don't usually integrate these topics and did not provide enough information to the students. The students wished to have more classes on topics such as HIV, risks of early childbearing, relationship between boys and girls for them to be informed and more aware about the risks so they can seek intervention for prevention.

Most of the students were familiar of sexuality education. Though other students associate it with the use of contraceptives or how a sexual intercourse is being done, others also answered that sexuality education provides more information about the reproductive system. When the students were asked about learning the effectiveness of condoms, pills and other forms of contraception in school, some of the students like it to be integrated in any lessons related to it since teenage pregnancy is very rampant nowadays. However others don't like the idea of integrating these topics for it triggers curiosity to the students but instead they wished to have classes explaining the risks of too early sexual activity.

The students believed that teachers have a big role to play in halting teenage pregnancy and HIV disease. According to Ronny (2007), education professionals should play the primary role in providing information about sexuality and developing related social skills. Andrade (2016), also states that teachers teaching sexuality education were equipped with adequate knowledge and skills to competently handle the subject.

The Students' Performance Level During Post-test

Table 3 summarizes the performance of the students during the post-test taken after a series of discussion and activity.

Table 3. Performance Level During Post-test

| Group | N | Mean | StDev | Description |
|-------|----|--------|-------|-------------|
| A | 50 | 38.460 | 2.233 | AA |
| B | 50 | 36.360 | 3.199 | AA |

T Value = 3.74

P Value = 0.000

The data in table 3 shows the mean of both groups during the post-test. Group A has a post-test mean gain of 38.46, higher compared to the pre-test mean gain found in table 2. Group B has a post-test mean gain of 36.36, higher compared to the pre-test mean gain found in the previous table. For the post-test, the students in both experimental groups had an Above Average Performance This shows that there is a significant mean gain difference between the pre-post test results.

One of the student respondent said that reproductive system is one of the interesting topics they want to hear and learn. As quoted by one of the students, *"Honestly saying, the topic is so interesting for its something we are curious about. I've learned a lot from the discussion. Using the powerpoint presentation and the way our teacher explains everything, she gives us the clear information and answers that we need"*. The students learned more about the structure of the male and female reproductive organs, function of the reproductive organs and the pituitary gland and the different processes such as the menstrual cycle, egg fertilization and the difference between a normal labor and obstructed labor. The students learned and enjoyed a lot from the educational videos about the reproductive system and the activities conducted by the researcher. The most important topic that they learned is about Human Immunodeficiency Virus (HIV) for they were able to realize that HIV is a human transmitted virus that is acquired through blood, saliva and fluids and a kind of virus that will risk a human's life forever. The integration gives the students the idea about the increasing risk of HIV to people especially those who are engaging early sexual activity, sexual intercourse to multiple partners and male to male sexual activity. One activity they like the most was when they read the Diary of an HIV Victim. They fear to have the virus for it states in the diary that once you have the virus, you'll have it for life. The students also learned that it is not easy to get pregnant in an earlier age. Through the discussions, the students were able to deepen their understanding towards the risk of early childbearing due to undeveloped parts or organs. As quoted by one of the students, *"Before, I was taught about the topics such as reproductive system and teenage pregnancy, I admit, I am a little bit aware but not as aware after the teaching session. I learned several information which were new to me. I can say that it was a great teaching"*. The students learned so much from the videos and activities found in the module. It opened their mind of the possible responsibilities, likewise the consequences they might encounter in the future if they will engage in premarital sex.

During the focus group discussion, all the students agreed that sexuality education in school in order for the students or teenagers to be aware and educated. Since teenage pregnancy is rapidly increasing, they think and believe that sexuality education is the solution. According to Nwakonobi (2009), sexuality education will go along towards helping the nation achieve its millennium goals which include halting the spread of HIV/AIDS and other diseases, reducing mortality and improving maternal health as well as the economic empowerment development strategies, since all problems are associated with premarital sex, unwanted pregnancies, child abuse, child trafficking, dropping out of schools and premature death.

As quoted by one of the students “As a more educated student, it is our objective now to share what we’ve learned to the people who are still stupid in making their decisions. To our younger brothers and sisters, we want them to learn the values and the lessons we’ve learned. As part of the community, we want the people to be preventive and more educated in order to have a healthy community because a healthy community is a safe community”. They said that it is important now to be educated about teenage pregnancy and HIV because the information will help the teenagers to be aware and be knowledgeable enough on how to prevent teenage pregnancy. They also added that aside from being educated, teenagers must involve to different activities such as sports and should have self-discipline within themselves for these are necessary to help avoid themselves from engaging early sexual activity.

The Pre-Post Mean Difference in Group A

Table 4 shows the outcome of the calculation of the pre-posttest means, mean gains, standard deviation and the computed t-test gathered by the students exposed to sexuality education in the third quarter.

Table 4. Pre-Post Mean Difference in Group A

| Group | N | Mean | StDev | Description |
|------------|----|--------|-------|-------------|
| A | 50 | 28.720 | 4.066 | BA |
| | 50 | 38.460 | 2.233 | AA |
| Difference | 50 | 9.740 | 4.019 | |

The data in table 4 shows that group B gained in the posttest from pre-test. The pre-test mean gain is 28.72 and increases to 38.46 mean gain in the post-test. This shows that the students in group A had a below average performance in the pre-test and had an above average performance in the post-test. This shows that there was a significant mean gain from the pre-test to post-test scores of the students from group A that were exposed to sexuality education.

The Pre-Post Mean Difference in Group B

Table 5 summarizes the performance of the students from the pre-test to post-test, mean gain, standard deviation and the computed t-test of the students exposed to sexuality education.

Table 5. Pre-Post Mean Difference in Group B

| Group | N | Mean | StDev | Description |
|------------|----|--------|-------|-------------|
| B | 50 | 28.080 | 3.691 | BA |
| | 50 | 36.360 | 3.199 | AA |
| Difference | 50 | 8.280 | 3.849 | |

The data in table 5 shows that group B gained in the posttest from pre-test. There is 28.08 mean gain from the pre-test and increases to 36.36 mean gain in the post-test. This shows that the students in group B had a below average performance in the pre-test and had an above average performance in the post-test. This shows that there was a significant mean gain from the pre-test to post-test scores of the students from group B that were exposed to sexuality education.

The Pre-Post Mean Gain Difference in Group A and B

Table 6 summarizes the performance of the students in both groups. Reflected in the table are the pre-post mean gains, standard deviation and the computed t-test from the students’ performance.

Table 6. Pre-Post Mean Difference in Group A and B

| Group | N | Mean (Pre-test) | Mean (Post-Test) | Mean |
|------------|----|-----------------|------------------|-------|
| A | 50 | 28.720 | 38.460 | 9.740 |
| B | 50 | 28.080 | 36.360 | 8.280 |
| Difference | 50 | 0.640 | 2.100 | 1.460 |

95% CI for mean difference: (0.129, 2.791)

T-Test of mean difference = 0 (vs not = 0) : T-value = 2.20 P value = 0.032

Table 6 shows that there is significant mean gain difference between the students' pre-test and post-test. The students in both experimental groups had an Above Average Performance. This signifies that the students' performance in the post-test reached to 50% passing and above in learning Reproductive System 10 integrated with Sexuality Education. Since the computed t-test value is 2.20 and its greater than the P value of 0.032, so the decision rule is to reject Ho or the null hypothesis and Ha is accepted. It is clear and vivid that there is an increase of student's level of awareness since sexuality education is being integrated in the topic. According to Iwu et al. (2011), sexuality education is one of the major avenues in passing accurate information which will help youths in secondary schools to integrate sex in their lives in a responsible and constructive manner and prevent unwholesome conditions like prostitution, promiscuity, unwanted pregnancies and STDs.

Challenges in Integrating Sexuality Education

Table 7. Challenges evident in integrating Sexuality Education in teaching Reproductive System.

| CHALLENGES | |
|---|--|
| Strengths/Opportunities | Problems and Concerns |
| <ul style="list-style-type: none"> • Students' differences in terms of their attitude, intelligence and beliefs. • No need much effort in motivating the students since the topic itself is interesting to them. • Giving awareness about the risks of early sexual activity and HIV spread. • Increasing students' self - efficacy especially in decision making in dealing with sexuality • Emphasizing the importance of one's moral values to attain successful and sustainable human relationships. • Conducting awareness through students' performance task. | <ul style="list-style-type: none"> • Time allocated to look for the reading materials and activities needed. • Delivering the lessons with decency and sensitivity. • Dealing with students' questions. • Students' absences |

Students' differences were factors that should be given much importance for they have varied interests and beliefs. The researcher had found it an opportunity at the same time strength for it adds knowledge to the researcher. The researcher provided different learning materials and activities that suit to the interest of the students and contributed a lot to their full understanding. Since the topics involved on how HIV is being acquired and the risks of early childbearing, the researcher had prepared videos for most of the students are visual learners thus learned more through visuals. According to the students, the videos and the activities helped them understand the risks of early sexual activity. The researcher had no difficult time in dealing with students' attention since the topic itself is interesting to them. The students were very attentive and cooperative during video presentations and activities. High school students are much more vulnerable to early sexual activity thus high risk of acquiring HIV so integrating sexuality education in lessons such as Reproductive System is a chance for the students to be informed about the risk of early sexual activity and provide ways to prevent them. After the students were informed, an increase of students' self-efficacy is evident through negative feedbacks on early sexual activity thus lead to wise decision making. The researcher finds it an opportunity to remind the students to restore their Filipino values for it's the only foundation in attaining successful and sustainable human relationships. Aside from this, it is also an opportunity for the students to relay the information learned and educating others through a performance task wherein the students were asked to make a video presentation about stopping teenage pregnancy to be posted in social media. This is to inform the people especially the youth that early sexual activity brings illness to the society.

The problems or concerns encountered by the researcher are time allocated to look for reading materials and activities needed, delivering the lessons with decency and sensitivity, dealing with students' questions and students' absences. The researcher took time looking for reliable reading materials and making interesting activities that will contribute to students' understanding and learning. The decency and sensitivity of delivering the lesson was also a challenged faced. The researcher made sure that the lessons were tackled comprehensively and students should take the topics seriously. The researcher was also challenged in dealing with students' questions. The researcher entertained every question without malice and tried to answer the questions based on facts. Students' absences were also a problem faced by the researcher. Every session and activity is important in the development of the lesson. If there is missed session or activity, the student will be having a hard time connecting to the topic.

The Enhanced Learning Module

The module was still developed vis a vis the K-12 curriculum guide utilized by the Department of Education where the content, content standard, performance standard and set of competencies are reflected. The activities found in the module are centered towards active and cooperative learning such as inquiry-based learning and problem based learning that have become recognized as essential to constructivist learning. The enhanced module still has lessons that are divided into five and each lesson has key concepts, activities and guide questions. The module has a strong emphasis on teenage pregnancy and HIV spread wherein the students learned the causes and were able to reflect on the consequences. The enhanced module contains a closure part wherein the learners need to reflect about the lessons they learned. Learning resources are also reflected every after the lesson to give credit to the authors behind the content of the lesson.

Summary of Findings

The major findings of the study drawn from the research instruments are outlined as follows:

1. Both the experimental groups had a below average performance level in the pre-test. The students in both groups had less prior knowledge on the topics given and some of the topics were new to them. Students have less information about the cause and effect of sexual transmitted disease Human Immunodeficiency Virus and risk of early sexual activity. Most of the students were familiar about sexuality education but less informed about the content. Though students have opposing belief on integrating the effectiveness of contraceptives in school, all of them believe that proper education should be given instead for the students to understand the risks of engaging early sexual activity.
2. The performance of both groups in the post-test had an above average performance. The integration of sexuality education in reproductive system helped the students increase their level of awareness towards the effects of early sexual activity and HIV spread. Students learned most in integrating the cause and effects of early sexual activity to topics such as Reproductive System. The integration gives the students the idea of having sexuality education in school for the students to be aware, educated and preventive.
3. There was a significant difference between the pre-test and post-test mean gain of the students. From the computed results, the researcher discovered that the integration of sexuality education in teaching reproductive system is effective in increasing the level of awareness of students on the consequences caused by teenage pregnancy and HIV spread.
4. The challenges appeared upon integrating sexuality education in teaching reproductive system is the researcher found it as strength because this study helps the students increase their self-efficacy especially in dealing with sexuality. Through learning topics like teenage pregnancy and HIV, it will lead the students to wise decision making thus values will be restored.
5. The module was based on the K-12 curriculum guide wherein the content, content standard and competencies were used as basis in the development of the module. These parts of the curriculum guide give the researcher the ideas for effective integration and formulate teaching techniques such as inquiry-based learning that have become recognized as essential to constructivist learning. In the module are the key concepts, activities, guide questions, valuing and performance task.

Conclusion

Sexuality Education is good avenue in passing accurate information to secondary students to integrate sex in their lives in a responsible and constructive way and avoid unwholesome conditions like unwanted pregnancies and STDs. The study found out that Sexuality Education is effective once integrated to topics such as reproductive system in increasing the level of student's awareness towards the risks of too early childbearing and Human Immunodeficiency Virus (HIV) spread. Through constructivist approach in integration, students were able to deepen their understanding about the importance of reproduction and avoid practices that could harm their lives. Sexuality Education provides information students need to delay sexual activity, increase self-efficacy through value restoration and engage in mutually respectful relationships.

Recommendations

In the light of the foregoing findings and conclusions the following recommendations are hereby offered:

1. Sexuality Education is effective once integrated into subjects such as Biology. This is a chance as well as an opportunity for the students to be educated about sexuality and be aware of the risks caused by early sexual activity and HIV spread. This will also give them the idea on avoiding themselves from acquiring HIV or stopping teenage pregnancy.
2. Integrating sexuality education may be extended to other fields of study for the improvement of the quality of education and raising the morale of the youth.
3. Teachers should start integrating sexuality education emphasizing teenage pregnancy and HIV spread to topics relevant to it. They should also make modules or look for related activities for effective integration.

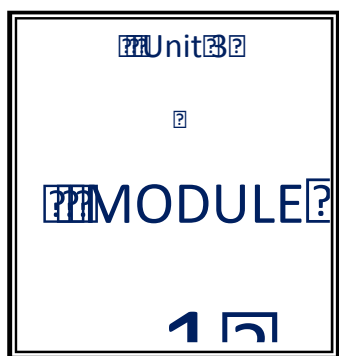
This is one good intervention in delaying sexual activity, preventing them from the risks or effects caused by early sexual activity and restore their values.

4. Revision of the curriculum guide especially in secondary schools. The competencies should address common problems in the society and provide performance task that seeks intervention to these problems.
5. Further research be done as a follow-up study to monitor the effectiveness of integrating sexuality education in teaching Biology or in any subjects both in high school and college.

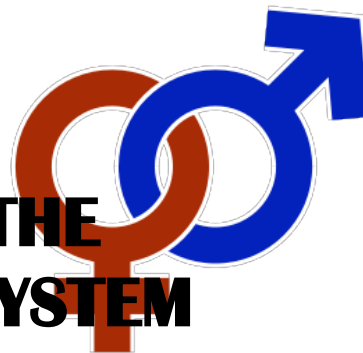
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FUNCTION OF THE REPRODUCTIVE SYSTEM



"One of the aims of sexual union is procreation - the creation by reproduction of an image of itself, of the union."

- **Mortimer Adler**

I. Introduction

An organism is made up of different systems and these systems coordinate with one another to perform their functions well. The body will become unbalanced if any part of these organ systems malfunctions. The instability caused by the malfunctioning of one system cannot be made stable by other systems because each system has its own function in the body. In Grade 9, you have already studied how the circulatory and respiratory work together and how lifestyle affects these systems. You also just learned the coordinated functions of the nervous and endocrine systems. Now, you will learn about the function of the reproductive system.

As you go through this module, you will be able to understand the importance of reproduction. You will also learn the reproductive system's health related issues, risks on early childbearing and how these affect you and your future.

This module tackles related lessons or topics which introduces the learners to the concepts of reproduction.

- Lesson 1 - **The Reproductive System**
- Lesson 2 - **Role of Hormones in Female and Male Reproductive System**
- Lesson 3 - **Feedback Mechanisms Involved in Regulating**

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