

Interactive Multimedia about Reproductive Health Education: Revealing its Effectiveness in Preventing Students' Premarital Sex

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Submission date: 23-Oct-2019 11:31PM (UTC+0700)

Submission ID: 1198835766

File name: APTEKINDO-REPRODUCTIVE.pdf (1.05M)

Word count: 2822

Character count: 16240

Interactive Multimedia about Reproductive Health Education: Revealing its Effectiveness in Preventing Students' Premarital Sex

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Abstract—this article aims at examining the effectiveness of interactive multimedia about reproductive health to enhance senior high school students' understanding about premarital sex among youths in Indonesia. This study used Plomp's model to develop the multimedia which covered five phases namely investigation, designing, realization, evaluation, and implementation. This study involved senior high school students as the research participants who came from three different schools located in Surabaya, Indonesia. Results showed that the participants responded positively about the developed multimedia and were able to improve and reformed their perception regarding the practice of premarital sex among youths. This study implies that it is necessary to integrate reproductive health education in the curriculum.

Keywords—interactive multimedia, reproductive health education, premarital sex, senior high students, vocational students

I. INTRODUCTION

Industrial revolution era 4.0 indicated by the spread and familiarity of digital tools in all life aspects which has affected people's lifestyles, social interaction, and the acceleration of transaction. Not to mention, such condition also affects youth's social interaction in different types of socialization settings, i.e. in cyber world interaction. In this type of interaction, people should be able to filter which one is good for themselves because there are too many forbidden sites that mostly contain porn substances. For example, people in Indonesia are currently startled with the presence of Bigo Live, an application that can be accessed through iOS and Android-based phones. The application gives a room for every user to live anything, including but not limited to several restricted practices. For instance, a girl might show her naked poses and begin to have some sexual fantasies. Such a show, then, can be uploaded to YouTube and accessed massively. Previous research has shown that adolescents consistently cite mass media as important sources of sexual information [1–3]. However, many of the media that adolescents are exposed remind about sexual imagery but they rarely portray the consequences of risky sexual encounters or convey healthy sexual messages [4–6].

The aforementioned phenomena ignite a high number of sadism and premarital sex among youths. In January 2018, Indonesian Police Watch (IPW) reported there were 54 cases about abundant babies found in streets. The accused

were mostly girls aged between 15 to 21 years old. This number was twice bigger than the cases happened in January 2017, which were about 26 cases.

Such disappointing conditions should be taken seriously, for instance, by initiating a prevention program such as educating youths with the awareness of reproductive health, so that they are expected not to be involved in the related case. In regard to this study's objectives, the reproductive health education has no correlation with how to do sexual intercourse but more into knowledge about reproductive problems and how they influence physically and psychologically. The given such education is relevant with Indonesia's national education goals namely to develop student's potential to be faithful, good, healthy, intelligent, creative, and independent, also being a democratic and responsible citizen. Specifically, this study focuses on senior high school students. The study in Saudi Arabia clearly showed that the reproductive health education program improves knowledge among adolescent girls (14-19 years) regarding reproductive health [7].

Senior high school students are indeed in their transition period, from child to adult periods. They experience puberty that can be indicated by the maturity of their reproductive organ and are ready to come in a sexual intercourse. There are some problems encountered by them such as perceived low knowledge and limited access to reproductive health care. Therefore, reproductive health education is vital to be implemented because it becomes an individual right that should be accommodated evenly. (Global issues discussed in *International Conference of Population and Development/ICPD* in Kairo, 1994) [8]. Moreover, they often do not have access to healthcare that meets their specific needs [9].

Reproductive health education developed in this study is integrated with the extracurricular activities by approaching to interactive media. The media is in a form of software that can let students do autonomous learning. Autonomous learning media must contain both explicit (e.g. knowledge written in books or articles) and tacit knowledge (e.g. knowing how, rule of thumb, and teacher's experience). This is due to the fact that such media substitute the presence of teachers [10].

Interactive compact disk is one of the learning media made by using software. This media can display texts,

pictures, graphs, videos, and audios that can give information easily. With a direct interaction, students are expected to investigate a specific knowledge independently without teacher's guidance. Students can compare, develop, and examine anything that has been learned without somebody's assistance. The type of the used media is chosen by considering cognitive theory where humans can organize and relate their new knowledge to their schemata.

II. METHOD

This developmental study used Plomp's model that involve five phases namely investigation, designing, realization, evaluation, and implementation [11]. The learning process of reproductive health for senior high school students was done within extracurricular activities and counselling classes. In investigation phase, experts' arguments on reproductive health education were identified. Then, the initial draft of the learning multimedia was designed. In realization phase, the multimedia was created and validated by certain experts in related fields. Finally, the multimedia was trialled in a limited scope and students' responses were then obtained to see how they looked at the developed multimedia. After being revised, the multimedia was then retested in the wider trial.

Senior high school students were chosen as the research participants. This study is aimed to examine the implementation of the developed multimedia to overcome youths' social interaction problems, especially in premarital sex. There were four schools used to be the settings of the research. For instance, SMK (Vocational High School) 1 Surabaya was chosen as the research setting for the first trial while SMA (Senior High School) Khadijah (representing religion-based school), SMK Ketintang (representing private school), and SMA 6 Surabaya (representing public school) were chosen for the wider trial.

III. RESULT AND DISCUSSIONS

A. Investigation Phase

At glance, this phase covered the explanation responded by school members toward reproductive health education (RHE). Data obtained from interviews were concluded that, firstly, RHE needed to be delivered to senior high school students because they were in a transition period. They were demanded to be able to filter any information because they currently lived in a place where hedonism and permissive lifestyle seemed rampant. RHE was aimed to give relevant information concerning youth's knowledge on reproductive matters. Second, RHE could be integrated in school curriculum through, for instance, extracurricular activities and counselling classes. Third, RHE could be delivered scientifically along with the consideration of moral ethic and religious values. Fourth, RHE includes reproductive health, organ, sexually transmitted disease and abortion. At last, the developed multimedia in a form of interactive compact disc and PowerPoint could be used as a module. Those data could be the basic rationale in devising RHE.

B. Design Phase

There were four main important materials covered in the developed multimedia about RHE. First, the concept of RHE encompassing definitions of reproduction and reproductive health, reproductive health education, RHE

objectives, reproductive health components, and requirements to perceive healthy reproductive organs. Second, reproductive organs actually disclosed the explanations regarding the outer and inner parts of woman's and man's reproductive organs along with each function, how to take care of reproductive organs, and reproductive processes. Third, the discussion about abortion denoted its definition and categories, impacts to health and psychology, abortion in Islam and legal law perspectives, and the causes of the increased abortion cases. PowerPoint and interactive CD were constructed based on the theme and systematic discussion in RHE module.

C. Realization Phase

Realization phase referred to interactive multimedia validation. Validation results given by some experts showed 3.5 to 4.5, meaning that the developed interactive CD was in a valid category. However, the experts suggested some improvements concerning the content, language, visualization, and audio. The multimedia's content should be clearer in explaining reproductive process as a function of preserving human species. Such improvement needed to be delivered in an appropriate language with simple explanation. Moreover, the visualization should be more simplified while the audio had not been consistent yet. The revised multimedia according to the experts' comments was further trialled in SMK 1 Surabaya.

D. Evaluation Phase

The process of evaluation phase start on the limited trial of interactive multimedia. 88% students at SMK 1 Surabaya gave positive responses toward the developed interactive multimedia. For the sake of improving the percentage, the researcher revised some features and the appearance, audio and colour variations, including extra scenes in the multimedia. The trial scope was widened up to SMK Ketintang Surabaya and 96.6% students showed positive responses.

E. Implementation Phase

The implementation of interactive multimedia was conducted on three schools, SMK Ketintang, SMA Khadijah and SMK 6. Student learning outcomes in the cognitive domain are known from the formative test. Means of the formative test is shown that SMK Ketintang students get score 86.7; SMA Khadijah students get 86.3 and SMA 6 students get 87.9. As the comparison, students' perceptions obtained from three different schools were shown in the following Table 1.

TABLE 1. STUDENTS' PERCEPTIONS ON WIDER TRIAL PRE-TEST OF RHE

Students' Perceptions on RHE	Trial I	Trial II	Trial III
Fair	68,1 %	76,9 %	63,9 %
Good	31,9 %	23,3 %	36,1 %

There was an improvement on students' perceptions regarding RHE after they got RHE materials. 81.8% participants from SMA Khadijah showed good perception while the others were in a fair category. In SMK Ketintang, 64.1% students had good perception while the others 35.9%

were in a fair category. At last, 66.6% students of SMA 6 Surabaya showed good perception, while the others were not.

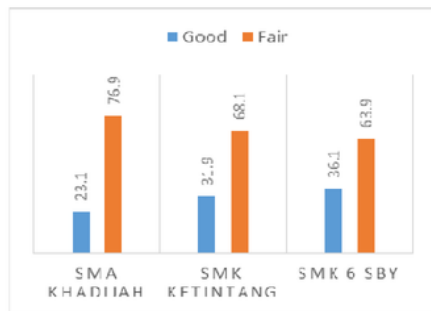


Fig. 1. Average score of pre-test results on reproductive knowledge.

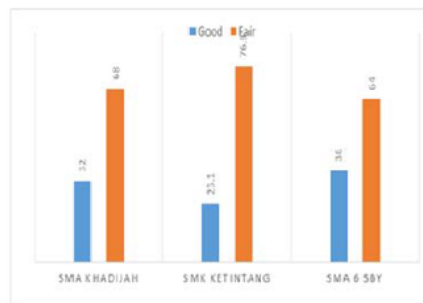


Fig. 2. Average score of pre-test results on perceptions of reproductive health.

The tabulation results of students' perceptions in wider trial scopes showed that there was an improvement regarding students' perception level between pre- and post-activities using RHE. In this finding, religion-based school, which represented by SMA Khadijah, conveyed better students' perception on reproductive health compared to vocational and public schools. Similarly, public school had better students' perception compared to those in vocational schools.

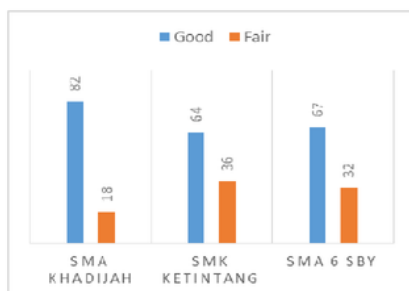


Fig. 3. Average score of post-test results on reproductive knowledge.

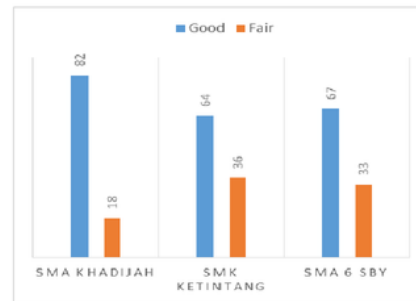


Fig. 4. Average score of post-test results on perceptions of reproductive health.

The discrepancy of students' perceptions were influenced by three factors namely 1) biological structural factor related to organ functions such as sight, hearing, smelling and others; 2) functional factor influenced by memory, need, habit, and experience gotten through personal and social interactions; and 3) cultural factor that could affect individual's tradition, norm, and religion [12]. Figure 5 describes the percentage comparison between pre students' perceptions and the perceptions after getting RHE materials.

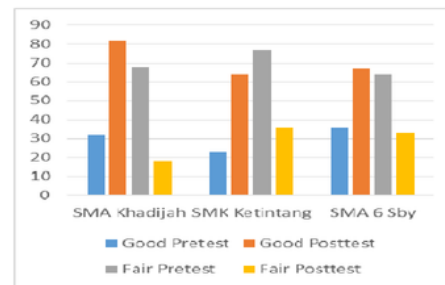


Fig. 5. Comparison of average pre and post-test scores about students' perceptions

Further, t-test was used to reveal the comparison between pre students' perception scores and after getting RHE materials.

- SMK Ketintang. Results revealed in this group showed that $t_{\text{test}} = 3.030$, t_{table} with df 38 and $\alpha = 0.05$ was 2.042. Based on that data, t_{test} (3.030) was higher than t_{table} (2.042) with significant value 0.04. The data is meant that there was an improvement regarding students' perceptions on reproductive health in SMK Ketintang after getting RHE materials.
- SMA Khadijah. Results revealed in this group showed that $t_{\text{test}} = 13.075$, t_{table} with df 21 and $\alpha = 0.05$ was 2.080. Based on that data, t_{test} (13.075) was

higher than t_{table} (2.080) with significant value 0.00. The data is meant that there was an improvement regarding students' perceptions on reproductive health in SMA Khadijah after getting RHE materials.

- SMA 6 Surabaya. Results revealed in this group showed that $t_{test} = 3.292$, t_{table} with df 36 and $\alpha = 0.05$ was 2.042. Based on that data, t_{test} (3.292) was higher than t_{table} (2.042) with significant value 0.02. The data is meant that there was an improvement regarding students' perceptions on reproductive health in SMA 6 Surabaya after getting RHE materials.

Results portrayed that RHE model proposed in this study using the assistance of the developed interactive multimedia was responded positively by students from three schools (>95%). Meaning that, the developed media that considered substantial factors could be understood easily and helped students comprehend reproductive health matters effectively, also the media was interesting. Such results showed that the RHE model was relevant with youth's problems because they were in a developing genetic phase that affects their behavioural changes when confronted with sexual matters.

In addition, above results indicated that youths indeed need the knowledge of reproduction as part to cope with their personal experiences. Learning process that lift up familiar themes (e.g. reproduction and sexuality) was in line with current learning innovation namely contextual learning. Contextual learning was described as the fact that students could apply and experience certain materials that were retracted from real-world problems, i.e. issues regarding personal to family, social, and national substances [13]. Students' responses showed that RHE materials became a meaningful learning process for students because they had an obligatory to master the learned contents. Students have a perception that RHE was relevant with their lives.

The use of multimedia in the delivery of RHE materials resulted on students' high learning achievement. The multimedia could raise a particular attraction to approach the concept with the reality, of which further stimulating students to be active during the learning process. The results of this study were also consistent with the previous study that worked on the use of multimedia in Nutrition teaching and learning process for students who learned food science.

IV. CONCLUSION

Based on above results and discussion, the developed interactive multimedia about RHE is valid according to its content, language and presentation. The media is positively responded by students because they can read and understand the contents easily. Moreover, it is attractive and helpful in comprehending reproductive health. By using this developed multimedia, both students' learning attainment and perceptions on the reproductive health problems show improvement, indeed, achieve better scores (>86) which has portrayed by three different senior high schools with different school basis. That is, the developed interactive multimedia is effective to deliver an understanding of the reproductive health and the prevention of premarital sex.

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