

## **CHAPTER V**

### **CONCLUSION, IMPLICATION, AND RECOMMENDATION**

#### **5.1 Conclusion**

Based on the aims and results of the research, an android-based application called 'HUPROSED' was created to educate students about the human reproductive system while also exercising their critical thinking skills. The following are some of the findings of this research :

- 1) There are four steps to developing a HUPROSED Android application. The first step is the decision-making stage. The researcher attempts to brainstorm content and the development application during this stage. The designing stage is the next step. At this point, the researcher begins to create an application flowchart and a storyboard. The development stage is the third stage. The researcher started developing the application at this step, depending on the determining and designing stages, which must be precise. The evaluation stage is the fourth step. At this point, the application was presented to an expert for evaluation. The application was then changed based on the expert's recommendations and evaluated by teachers and students. The final version is based on the comments of the teachers and students on the questionnaire
- 2) The application got a review from three expert judgments. The final average score on the material aspects is 3.44, followed by a quiz category with an average score of 3.56 and the display category with an average score of 3.48. For the program, the category got 3,13, and the implementation of critical thinking subskills in the game got 3,13. The average for all categories is 3.37, which is good, indicating that the HUPROSED Android application was ready to be used, although it still needs some improvement.
- 3) The application got a review from three science teachers. The final average score on the curriculum aspects is 3.08, followed by a learning category with an average score of 3.25 and the benefit for teachers with an average score of 3.33. The opportunities for implementation got 3,40, and the implementation of critical thinking subskills in the game got 3,20. The overall average is 3.23,

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which is excellent and indicates that the HUPROSED Android application was ready to use, while it still needed more improvement.

- 4) The students also provide feedback on the application. The final average score on display aspects is 3.26, followed by buttons aspects with an average score of 3,00, color sustainability with a 3.50, and image suitability with a 3.11 average score. The use of an image with a 3,26 average score, animation with a 3,33 average score, and the aspects that explain HUPROSED as the application to prevent misunderstandings in this study, the operational definition is provided in the following terminology 3,43 average score. The ease of understanding language got a 3,20 average score, while the navigation buttons got a 3,15 average score, and the quality of interaction got a 3,28 average score. The use of multimedia got a 3,15 average score, and the problem adequacy got 3,28. Also, the last aspect is the attractiveness and motivation got 3,61. The HUPROSED Android application has an average score of 3.25, or excellent in all categories, suggesting that it is ready to be utilized in learning activities.
- 5) The Development of HUPROSED is based on research (Human Reproductive System and Sex Education). It can be concluded that the development of the game "HUPROSED" using Unity 2019 is categorized as "good" for exercising students' critical thinking skills, and based on the results of the questionnaire from the assessment rubric, it receives an average score of 3.28, indicating that this game can be used to exercise students' critical thinking skills. The HUPROSED application supports only the Android operating system. The user may interact with a variety of buttons. The resources demonstrate the human reproductive system and its relationships and complete sex education through guided inquiry. Currently, there is just one version of the program, which is the English version. The program may yet be improved in terms of design and interaction in the future.

## **5.2 Implication**

This research produced an Android application based on the findings that may be used to assess students' critical thinking abilities on themes related to the human reproductive system. Experts, science teachers, and students all gave

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excellent input, and the application was revised. It indicated that the HUPROSED Android application is ready for a learning activity to examine students' knowledge of the human reproductive system topics. Furthermore, this kind of study may be done on various biological issues, whether they are included in the National Curriculum or the Cambridge Curriculum, or another curriculum.

### **5.3 Recommendations**

Based on the findings, several recommendations for developing a 'HUPROSED' android-based application to assess students' critical thinking skills on themes related to the human reproductive system linked with sex education have been made. The suggestions were made to students, teachers, society, and other researchers who may contribute to the application's and learning environment's future development. The following is a list of the recommendations:

#### 1) Students

Industrial Revolution 4.0 encourages the development of information and communication technology, allowing for technology implementation in all aspects of life, including education (Eliyawati et al., 2020). This research can give a new experience of learning and can enhance students' critical thinking through games. It is intended to bring the educational environment into the twenty-first century. The digital era is required to make information accessible everywhere, anytime, to anybody, and at low prices.

#### 2) Teacher

This research about developing the human reproductive system topic to enhance students' critical thinking skills can be used as a teaching media in the learning process. The teacher may use the HUPROSED Android application to educate students about the human reproductive system. However, certain elements are best explained to students directly. Let's say the teacher wishes to put the app into practice. They'll need to develop techniques to ensure that the learning activities aren't wasted by allowing students to play the app.

### 3) Society

This research about sex education is helpful as media for introducing comprehensive sex education from toddler until adult. Comprehensive sexuality education equips youth with the information, attitudes, and skills they need to protect and care for their health, well-being, and dignity. Therefore, hopefully, HUPROSED can also minimize the misconception or taboo things in sex education.

### 4) Another researcher

This study may be used as a resource that can be used as one alternative in developing research, and deficiency and excess in this study can be evaluated. The app may still be built in a variety of ways. The Unity program has several capabilities to make an application more engaging and enjoyable. It is maximizing the use of Unity software, which is widely regarded as the most incredible development tool for creating games and other apps. It's also essential to think about design software. Canva is the leading platform used in this research. Another researcher may produce a figure or animation using more complex tools such as Adobe Photoshop or Corel Draw.

