CHAPTER V
CONCLUSION AND SUGGESTION

5.1. Conclusion

Based on the results of research, analysis, and discussion, the following conclusions are obtained:

1. Based on the results of the define stage, it was found that students still needed to understand DNA barcoding, had never used PCR, and had never used MEGA XI. Besides that, the existing student worksheets still use the conventional approach; therefore, students have never used a worksheet with a molecular approach, especially in DNA Barcoding, even though two learning outcomes must be mastered by students in the invertebrate taxonomy course related to DNA Barcoding.
2. Based on the results of the design stage, a student worksheet based on DNA Barcoding on insects is produced, which consists of eight components, namely a guide to using student worksheets, competency achievement, a concept map, theory information, supporting information, activity sheets, exercises with crossword, and evaluation.
3. The feasibility level of the final product is categorized as "Very Worthy" according to the material/ content expert validation.
4. The feasibility level of the final product is categorized as "Very Worthy" according to the learning approach expert validation.
5. The feasibility level of the final product was categorized as "Very Worthy" according to the lecturer on the subject of invertebrate taxonomy response.
6. Based on the results of student responses in the small group and big group tests, it was stated that both had a feasibility level for the final student worksheet category "Very Worthy."

7. The developed student worksheets effectively increase student achievement and are included in the "High" gain category based on the pretest and posttest results.

5.2. Suggestion

Based on the results of the research conducted, the following suggestions such as:

1. It is hoped that the student worksheets product that has been developed can be used in invertebrate courses on the topic of DNA barcoding.
2. Development of DNA Barcoding student worksheets on insect material can be expanded and redeveloped so that student worksheets related to DNA barcoding are further developed, such as examples regarding gene diversity, genetic distance, and haplotypes.
3. In this study, limited access to PCR machines may affect the ability to perform DNA Barcoding analysis on insect samples. PCR simulation websites can be used as an alternative to understanding PCR (demonstration). However, if a researcher intends to carry out a practicum using PCR directly, it is essential to collaborate with other laboratories or institutions that have access to PCR machines.