

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Based on the objectives, results and discussion of learning modules development and experimental research on digestive system topic in grade XI IA then the conclusions obtained are:

- a. Overall, the assessment of biology learning modules by students are "Worthy" category as a learning module in the class, it is supported by validation result of instructional learning media experts, material experts and electronic media expert.
- b. The response of students in individual test, small group trial, medium group trial and field trial toward biology learning media on the digestive system materials developed show that all aspects of learning modules assessment are included in the category of "Very Good", it can be seen from student learning outcomes using interactive digital learning modules have an average value that is higher than students' learning achievement who using electronic modules and text learning modules.
- c. Learning modules give significant effect toward students learning achievement, retention, activity and autonomy. The interactive learning module is the superior module than the other modules used.
- d. There is no influence of self-efficacy on students' learning achievement at class XI IA SMAN 2 Balige with $p = 0.355$ Nevertheless, the percentage of students' learning achievement who have high ability of self-efficacy is higher about 1.41% than students who have low self-efficacy.
- e. There is no influence of self-efficacy on students' learning retention at class XI IA SMAN 2 Balige with $p = 0.121$. Nevertheless, the percentage of students' learning retention who have high ability of self-efficacy is lower about 3.33% than students who have low self-efficacy.
- f. There is no influence of self-efficacy on students' learning activities at class XI IA SMAN 2 Balige with $p = 0.341$. Nevertheless, the percentage of students' learning activities who have high ability of self-efficacy is lower about 1.75% than students who have low self-efficacy.
- g. There is significant effect of self-efficacy on students' learning autonomy at class XI IA SMAN 2 Balige with $p = 0.02$. Nevertheless, the percentage of students'

learning autonomy who have high ability of self-efficacy is higher about 3.17 % than students who have low self-efficacy.

- h. There is no effect on students' learning achievement who live in boarding program and don't live in dorm at SMAN 2 Balige with $p = 0.40$. Nevertheless, the percentage of students' learning achievement who don't live in dorm program is lower about 1.22% than students who live in dorm program.
- i. There is no effect on students' learning retention who live in boarding program and don't live in dorm at SMAN 2 Balige with $p = 0.818$. Nevertheless, the percentage of students' learning retention who don't live in dorm program is higher about 0.626% than students who live in dorm program.
- j. There is significant effect on students' learning activities who live in boarding program and don't live in dorm at SMAN 2 Balige with $p = 0.000$. Nevertheless, the percentage of students' learning activities who live in dorm program is lower about 8.23% than students who don't live in dorm program.
- k. There is significant effect on students' learning autonomy who live in boarding program and don't live in dorm at SMAN 2 Balige with $p = 0.000$. Nevertheless, the percentage of students' learning autonomy who live in dorm program is higher about 8.56% than students who don't live in dorm program.
- l. There is significant effect on the interaction of boarding programs and learning modules that are used on the retention of students of class XI IA SMAN 2 Balige with $F=13.551$, $p = 0.000$, where a group of students who learned with interactive digital learning modules and live in dorm program significantly is higher about 1.939 % when compared with a group of students who learned with interactive digital learning modules and live in non dorm class.
- m. There is significant effect on the interaction of boarding programs and student's self efficacy toward learning autonomy of students at class XI IA SMAN 2 Balige with $F = 19.642$, $p = 0.000$, where a group of students who have high level self efficacy and live in dorm program significantly higher about 12.25% when compared with a group of students who have high level self efficacy and don't live in dorm program.
- n. There is significant effect on the interaction of learning modules and student's self efficacy toward learning autonomy of students at class XI IA SMAN 2 Balige

with $F = 6.517$, $p = 0.002$, where a group of students who have high level self efficacy and learned with interactive digital learning modules significantly higher about 5.7 % when compared with a group of students who have low level self efficacy and learned with interactive digital learning modules.

- o. There is significant effect on the interaction of learning modules and student's self efficacy toward learning activities of students at class XI IA SMAN 2 Balige with $F = 5.618$, $p = 0.004$, where a group of students who have high level self efficacy and learned with interactive digital learning modules significantly higher about 2.62 % when compared with a group of students who have low level self efficacy and learned with interactive digital learning modules.
- p. There is significant effect on the interaction of learning modules, dormitory program and student's self efficacy toward learning activities of students at class XI IA SMAN 2 Balige with $F = 5.142$, $p = 0.007$, where a group of students who have low level self efficacy, learned with interactive digital learning modules and don't live in dorm program significantly higher about 22% when compared with a group of students who have low level self efficacy, learned with interactive digital learning modules and live in non dorm program.
- q. The results of students' learning achievement using text learning module is superior when used by sample from boarding program where as the interactive learning module learning outcomes are superior if used by sample derived from non-boarding program. The self-efficacy of students from boarding program is higher than the non-boarding students.
- r. The twelve treatments in this research showed the different learning activity significantly.
- s. Students who use interactive learning modules that live in dormitories and have high efficacy show the higher learning independence when compared with students using text learning modules that do not live in a dorm and have high efficacy.
- t. Retention of students who using interactive learning modules from different efficacy and programs is higher when compared with the use of text learning modules.

5.2. Implication

Based on the result and conclusion above, the implication obtained namely:

Instructional media will give a practical contribution especially in the implementation of the learning process where the teacher's instructional media provides convenience in organizing learning.

Contribute ideas and reference materials for teachers, managers, developers, educational institutions and further researchers who want to study and develop a deeper understanding of the biological interactive digital learning modules. The use of interactive digital learning module in class will give higher learning performance that learned by using text learning module.

Learning activities of students that learned to use interactive digital learning modules, high self-efficacy and do not stay in the dorms are higher than the activity of studying biology students that learned to use e-learning modules, high self-efficacy and do not live in the dorms, and higher than the students' learning activities learned by using text learning modules, high self-efficacy and do not live in a dorm.

5.3. Recommendation

Based on the result and conclusion above, the recommendation obtained namely:

1. Lecturer / Researcher

- a) Considering that the learning process is still using less effective instructional media, it is recommended that teachers use instructional media that have been developed especially in the digestive system of material that can attract and help students better understand the subject matter.
- b) Evaluation tool that is used needs to be designed with materials that raises students' thinking power.
- c) The results of this study can be used as a reference for similar studies with the material / concepts such as the respiratory system, circulatory system.

2. Student

- a) Student needs to improve understanding related to the biology concepts.