

## **CHAPTER V**

### **CONCLUSION**

#### **5.1 Conclusion**

Based on research that has been conducted by developing one of the learning media, namely student digital worksheets that are more interactive based on the Logan Avenue Problem Solving (LAPS)-Heuristic model to facilitate students in thinking critically. Through the ADDIE development model, namely (1) Analysis, (2) Design, (3) Development, (4) Implementation and (5) Evaluation. Then the following conclusions were obtained:

1. Based on the results of the validity data analysis, the percentage of validity obtained on the material expert is 92% and based on the media expert is 85.4%, the student digital worksheet based on the Logan Avenue Problem Solving (LAPS)-Heuristic model assisted by e-learning developed is declared very valid.
2. Based on the results of the practicality data analysis, the percentage of practicality for the teacher response questionnaire was 90.27% and included in the very practical category. This shows that the student digital worksheet that has been developed based on the teacher's assessment meets the needs and expectations in the field, can be used in the learning process, and also the use of the student digital worksheets provides a useful breakthrough in learning. Then based on the student response questionnaire, the percentage of practicality is 92.9% and is included in the very practical category. Based on the results of the two questionnaires, both teacher and student questionnaires, it can be concluded that learning by applying the Logan Avenue Problem Solving (LAPS)-Heuristic model based on e-learning is practical to improve students critical thinking skills.
3. Based on the results of the effectiveness data analysis, the percentage of effectiveness of the assessment of classical student learning completeness obtained from the results of the posttest or final ability test with classical student learning completeness of 86.67%, assessment of the completeness of

learning objectives that have been achieved on items 1, 2, and 3. Also, the achievement of learning time carried out is four meetings (8 x 40 minutes), the learning time used also does not exceed the usual learning time. Then, based on the gain analysis obtained from the pretest and posttest scores in order to see the increase in students' critical thinking skills, the results show that students' critical thinking skills have increased with an average gain score of 0.639. Which means that the increase is in the moderate category. Based on the description above, it is concluded that learning by applying student digital worksheet with the LAPS-Heuristic model is effective to improve students' critical thinking skills.

4. The process of students' answers in completing the critical thinking skills test can be said to be good. This can be seen from the complete and correct student answer process, the diversity of the answer process owned by students and an increase in students' critical thinking skills.

## **5.2 Suggestions**

Based on the research results and conclusions, the researcher suggests the following:

1. Student digital worksheet based on the Logan Avenue Problem Solving (LAPS)-Heuristic model that has been developed can be used to make student digital worksheets with other materials to improve students' critical thinking skills at both the same and different levels of education units.

2. Researchers suggest to readers and practitioners to be able to conduct similar research, development of learning devices on learning materials and the same model with different skill improvements and different materials in this study.