CHAPTER V
CONCLUSION AND SUGGESTION

5.1 Discussion

The development of HOTS-oriented learning tools through the PBL model using the plomp development model aims to improve the ability to understand mathematical concepts in class VII students of SMP Negeri 3 Medan. The process of developing learning tools starts from the stages of (1) preliminary investigation, (2) design, (3) realization/construction, (4) test, evaluation, and revision, and (5) implementation. Through the results of this study, conclusions can be drawn which can be described as follows:

1. The effectiveness of the HOTS-oriented learning tools through the PBL model in this study has been effective, based on the analysis carried out on the learning outcomes test, the study completeness analysis (kb ≥75) obtained 100% and the completeness analysis of learning objectives/ achievement indicators obtained 87%.
2. The validity of the HOTS-oriented learning tools through the PBL model in this study is valid, based on the analysis carried out on the results of the validity carried out by the validator on the learning tools with the results on the learning implementation plan (RPP) getting an average of 4,27, on student activity sheets (LKS) got an average of 4,23, and HOTS test instruments got an average of 4,17.
3. The practicality of HOTS-oriented learning tools through the PBL model in this study has been practical, based on the analysis conducted on teacher response questionnaires, student response questionnaires and learning activity observation sheets. With an average score for the teacher's response questionnaire is 3.89, the average score for the student response questionnaire is 3.74 and the average percentage for learning activity observation sheets is 80.56%.
4. HOTS-oriented learning tools through the PBL model were developed using the plomp development model with the steps of (1) preliminary investigation, (2) design, (3) realization/construction, (4) test, evaluation,

and revision, and (5)) implementation. At the preliminary investigation stage, the researcher analyzed the curriculum used, namely the 2013 curriculum and chose the PBL learning model because it is oriented towards critical thinking skills. followed by interviews with teachers of mathematics class VII-H of SMP Negeri 3 Medan to find out about students' abilities in working on HOTS-based questions. based on the results of the interview, it can be seen that students have middle to lower abilities for class VII-H SMP Negeri 3 Medan. After carrying out the preliminary investigation stage, the researcher carried out the design stage. At this stage, the researcher designed a learning tool that contained the material used, namely rectangular material at 4x meetings using the Problem Based Learning (PBL) model, and included indicators of critical thinking skills used in the questions in the learning tool. Then designed a research instrument consisting of teacher response questionnaires, student response questionnaires and learning activity observation sheets. The purpose of this stage is to design a product from the results of the development of these learning tools that are as expected. The learning tools developed are learning implementation plans (RPP), student activity sheets (LKS) and HOTS test instruments. After the learning device is designed, it is followed by the realization/construction stage. At this stage it is carried out to realize the results of the design in the previous stage, namely, learning implementation plans (RPP), student activity sheets (LKS) and HOTS test instruments. The next stage is the test, evaluation, and revision stage, where at this stage the resulting learning tools are validated by the validator. But first the learning device must be revised based on suggestions and directions, then fill in the learning device validation sheet by the validator. The validator consists of 2 lecturers and a math teacher. After obtaining the data, then the data analysis results of the validation of the learning device are then carried out to find out the results of the product analysis that has been developed. Then the final product is obtained from the development of learning tools that have been tested for validity. After completing the test, evaluation, and revision stages, it is followed by the final stage, namely the implementation stage. At this stage

the learning devices were tested in class VII-H of SMP Negeri 3 Medan to be able to test the practicality and effectiveness of the learning devices. practicality testing is done by using the teacher's response questionnaire instrument, student response questionnaires and learning activity observation.

5.2 Suggestion

Suggestions that can be given based on the research that has been done are as follows:

1. The HOTS-oriented learning tools through the quadrilateral material PBL model that have been developed are expected to be used in schools that have the same characteristics as the schools where the learning device research was carried out.
2. Learning tools in the form of learning implementation plans (RPP), student activity sheets (LKS) and HOTS test instruments that have been developed have valid, practical, and effective criteria. Therefore, other researchers can develop similar learning tools according to the same procedures as other material procedures and models.