

CHAPTER V

CONCLUSION AND SUGGESTION

5.1 Conclusion

Based on the results and discussion presented in Chapter IV, several conclusions can be drawn regarding the development and implementation of a HOTS-based e-module integrated with Discovery Learning in thermochemistry learning.

1. The feasibility of the developed e-module is classified as **Highly Feasible**, as indicated by the results of media expert validation and material expert validation, which obtained average scores of 3.32 and 3.31, respectively. These results show that the e-module is appropriate in terms of visual design, functionality, content accuracy, presentation, and language.
2. The effectiveness of the developed e-module in improving students' learning outcomes is proven by the significant increase in pretest and post-test scores, with the mean score improving from 37.58 to 86.52. The average N-gain score of 0.79 falls into the **High** category. These results indicate that the e-module is highly effective in improving students' understanding of thermochemistry.
3. The response of the e-module is categorized as **Very Positive**, based on teacher and student responses. The teacher response analysis yielded an overall mean score of 3.51, while the student response trials produced a grand mean score of 3.27. These findings indicate that the e-module is attractive, easy to use, and effective in supporting the learning process.

The integration of Higher Order Thinking Skills (HOTS) and Discovery Learning within the e-module encourages active learning, independent concept discovery, and higher-level cognitive processes. This integration contributes significantly to students' improved learning outcomes and supports the implementation of student-centered learning in chemistry education.

5.2 Suggestions

Based on the conclusions obtained from this study, several suggestions are proposed for future implementation and research.

1) For Teachers

Teachers are encouraged to use the developed HOTS-based e-module integrated with Discovery Learning as an alternative or complementary learning resource in thermochemistry instruction. Teachers may also adapt and expand the e-module for other chemistry topics that require conceptual understanding and higher-order thinking skills.

2) For Students

Students are advised to utilize the e-module not only during classroom learning but also for independent study. The interactive and structured nature of the e-module can help students deepen their understanding of thermochemistry concepts and improve problem-solving abilities.

3) For Schools

Schools are encouraged to support the use of digital learning media by providing adequate technological facilities and internet access. Institutional support can enhance the effectiveness of e-modules in promoting digital-based and student-centered learning.

4) For Future Researchers

Future research is recommended to conduct wider dissemination and implementation of the e-module involving larger and more diverse student populations. Further studies may also examine the long-term impact of the e-module on students' higher-order thinking skills, learning retention, and motivation.