

PREFACE

Praise and gratitude to the Allah SWT, because with His blessings, grace and guidance the author can complete this thesis well. The thesis with the title "Development of Student Worksheet Oriented Learning Cycle 7-E to Improve Students' Critical Thinking Skills in Reaction Rate Materials" was prepared to fulfill the requirements needed to achieve a Bachelor of Education degree in the Bilingual Chemistry Education Study Program, Faculty of Mathematics and Natural Sciences (FMIPA), Universitas Negeri Medan.

The preparation of this thesis has gone through a long and tiring road and various stages in accordance with the standard procedures applicable at FMIPA Unimed. The selection of the research topic is based on current problems related to the lack of learning tools based on critical thinking skills which makes students have not mastered these skills. This research aims to provide innovation in chemistry learning tools and is expected to improve students' critical thinking skills.

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The author expects suggestions and input from various parties. Hopefully this thesis can be useful for readers and parties, especially in the field of chemistry education.

May God be the one who repays the kindness of everyone who has helped the author and this thesis can provide many benefits for the author and everyone indeed, and only for the praise of God's name.

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The author,


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