ACKNOWLEDGEMENT

First I thank God for giving me strength during my study. I would like to express my sincere appreciation and gratitude to my supervisor Professor Drs. Manihar Situmorang M.Sc.Ph.D for his professional expertise, invaluable guidance, persistent, encouragement, patience, incisive comments, enthusiasm and generous contribution of his valuable time in supervising this thesis as well as conducting of this research. I would also like to thank my examiner Prof. Ramlan Silaban M.Si, Dr. Simson Tarigan and Dr. Marham Sitorus for their patience, guidance, assistance and comments in the development of my thesis. Appreciation is also directed to my academic supervisor Dr. Iis Siti Jahro M.Si. Gratitude and sincere appreciation are extended to all of the lecturer and staffs in Chemistry department of State University of Medan (UNIMED).

Gratitude and sincere appreciation are also extended to principal and chemistry teachers of MAN 1 Medan, SMA S Al Azhar, SMA S Al-Ulum for granting me the permission to conduct my research in the schools and also for students that helping in the pilot study as well as the actual study. Their cooperation, endurance and involvement in data collection are very much appreciated. I am grateful to my lecturers Dra. Ani Sutiani M.Si and Dr. Retno Dwi Suyanti M.Si for assessing the innovated learning module and contextualization of the items in the instrument and the content validation.

My sincere thanks are also extended to my beloved father Mr. Malun Saragi and my beloved mother Mrs. Halidah Siregar for their love, support and encouragement during my study. I am also grateful to my younger sister Zulviana Oktari Saragi and Halimatu Sakdiah Saragi and also for my younger brother Zulham Affandi Saragi and my cousin, Ayu that support and pray me to finish this study.

Above all, I express sincere gratitude to my friends in Bilingual chemistry education 09 especially, Rahmi Wardha Lubis, Masitho Purnama sari, Ika Irayani,
Siti Rahmah and Yeni who faithfully gave me encouraging support throughout the duration of my writing.

The writer realized that it still have a weakness in arrangement this thesis. But the writer has given maximum effort to finish this thesis. Therefore, the writer receives criticism and suggestion to make this thesis be better. Hopefully, this thesis can be useful for the education development.

Medan, June 2013

Writer,

Fitri Maulida Saragi