PREFACE

The authors say the praise and gratitude to God Almighty, for all the graces and blessings that provide health and wisdom to the author that this study can be completed properly in accordance with the planned time.

Thesis entitled "The Effect of Guided Discovery Learning Model on Student's Achievements at Characteristics of Wave Topic in SMA N 1 Medan Class XI Academic Year 2014/2015", prepared to obtain a Bachelor's degree Physical Education, Faculty of Mathematics and Natural Science in State University of Medan.

On this occasion the authors like to thank Mr Alkhafi Maas Siregar, M,Si. as Thesis Supervisor who has provided guidance and suggestions to the author since the beginning of the study until the completion of this thesis writing. Thanks also to Prof. Drs. Motlan, M.Sc.,Ph.D., Drs. Pintor Simamora, M.Si., and Drs. Rahmatsyah, M.Si. who have provided suggestions from the research plan to complete the preparation of this thesis. Thanks also presented to Drs. Sehat Simatupang, M.Si, as the Academic Supervisor and also the entire Lecturer and Staff in Physics Department FMIPA UNIMED who have helped the author. Appreciation were also presented to Headmaster and all teacher in SMA N 1 Medan especially Mam Remedi Sagala who have helped during this research.

My endless love is dedicated to my beloved family. A lot of thanks must be delivered to my beloved father, **Remus M Lumban Tobing** and my mother, **Mastaida Sitompul**. Thank you very much for your love in my life and thanks for all the prayers that you pray to God for me. And also my sister, **Flo Tobing**, my only one brother **Willy Tobing**, **Netha Tobing** and all family who have prayed and gave me encouragement to complete my study in UNIMED.

Thank you to all my friend, especially for Bilingual Physics Class 2011, PPLT SMA Negeri 1 Plus Matauli Pandan, my thesis-group friend dearest Vini and Yeni, and my best friends Agnes Mawar Yunita Sihombing who have helped, prayed and gave supported to author.

The author has endeavored to as much as possible in completing this thesis, but the author is aware there are many drawbacks in terms of both content and grammar, then the authors welcome any suggestions and constructive criticism from readers for this thesis perfectly. The author hope the contents of this paper would be useful in enriching the repertoire of knowledge.

Medan, July 2015 Author,

Yohana Glorya Tobing

