

FOREWORD

The author expresses praise and gratitude to the Almighty God who has bestowed His grace and blessings, allowing the author to successfully complete this thesis in accordance with the planned timeframe, titled **"Development Of Teaching Materials On Human Coordination System Based On Science Literacy At Class XI IPA SMAN 3 Tarutung."**

This thesis is written to fulfill a part of the requirements for obtaining a Bachelor's degree in Biology Education at the Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Negeri Medan. The author extends heartfelt thanks to all parties involved in the preparation of this thesis, especially to the author's extended family. Special appreciation is dedicated to both parents, Mr. Richard Butar-Butar and Mrs. Erika Simorangkir, who have tirelessly raised, educated, and provided support both morally and materially. They have continuously prayed, guided, and motivated the author, leading to the completion of this thesis. May God always grant them good health and shower His best blessings upon the author's parents.

On this occasion, the author also conveys respect and gratitude to those who have assisted by offering prayers, support, and guidance in completing this thesis. The author expresses profound gratitude to:

1. Prof. Dr. Baharuddin.ST., M.Pd., as the Rector of Universitas Negeri Medan.
2. Ahmad Shafwan S. Pulungan, M.Si., as the thesis advisor who graciously provided guidance, direction, and motivation, enabling the completion of all stages in the preparation of this thesis.
3. Prof. Dr. rer. nat. Binari Manurung, M.Si., Dr. Hasruddin, M.Pd., and Mrs. Aswarina Nasution, M.Pd., as the examiners who provided valuable suggestions for improvement, contributing to the refinement of this thesis, ensuring its successful completion.

4. Dr. Tumiur Gultom, SP, MP., and Dr. Ely Djulia, M.Pd., as academic advisors who provided extensive guidance to the author during the study.
5. Prof. Dr. Fauziah Harahap, M.Si., as the Dean of the Faculty of Mathematics and Natural Sciences (FMIPA) at Universitas Negeri Medan, and Mrs. Khairiza Lubis, M.Sc., Ph.D., as the Head of the Biology Department at Universitas Negeri Medan.
6. Dr. Melva Silitonga, M.S., as the expert material validator of the instructional book product developed, for her assessment, guidance, and suggestions for improvement as part of refining the content of the research product.
7. Mr. Halim Simatupang, S.Pd., M.Pd., as the validator of the instructional product developed, for his assessment, guidance, and suggestions for improvement as part of refining the design of the developed product.
8. Mr. Onggal Sihite, M.Si., as the validator of the layout design of the instructional product developed, for his assessment, guidance, and suggestions for improvement as part of refining the design of the developed product.
9. The staff of the Biology Department and FMIPA Universitas Negeri Medan, who assisted the author in handling administrative files during the preparation of the final thesis.
10. Mr. Dalles Tambun as the principal of SMAN.3 Tarutung, who granted permission to the author to conduct research in the school he leads.
11. Mrs. Murniasih, S.Pd., as the biology teacher at SMAN.3 Tarutung, who allowed and guided the author in conducting research in her class.
12. Students of class XI MIA 2023/2024 SMAN.3 Tarutung.
13. Especially to the entire family and beloved younger brother of the author, Devid Ricardo Butar-Butar, who provided much motivation, prayers, and support.
14. Special thanks to dear friends of the author, Tivany Verensia Sianipar, Novita Sari, Adhe Permata Syafruzar, Anggi Lestari, Sandrina Alicya, Adinda Purnama, who provided encouragement, accompanied the author's

days, listened to concerns, reminded in every situation, and assisted in every process of preparing this thesis.

15. Friend and fellow companion of the author, Aridha Syuhfa Br. Pinem, and Reka br Tarigan who provided much encouragement and assistance in the process of preparing this thesis.

16. To the entire Bilingual Biology 2019 family, thank you for the togetherness during the course of our studies.

The author acknowledges that this thesis is not perfect due to the limitations in knowledge and experience. Therefore, the author welcomes constructive suggestions and criticism from all parties. It is hoped that this thesis will be beneficial for the readers.

Medan, 23 January 2024



Teresia Okarina
IDN. 4193342005