ABSTRAK

ERNA HELENA M TAMPUBOLON: *Pengembangan Model Pembelajaran Aktif Berbasis Inquiry Untuk Membangun Keterampilan Berfikir Tingkat Tinggi (Higher Order Thinking Skills/ HOTS) Mahasiswa Pada Pengajaran Kimia Umum.* Disertasi. Medan. Program Pascasarjana Universitas Negeri Medan, 2024

Model pembelajaran aktif berbasis inquiry (MPABI) merupakan model pembelajaran yang digunakan untuk meningkatkan kemampuan berfikir tingkat tinggi. Karena MPABI dapat memberikan kontribusi dalam peningkatan motivasi belajar kimia, kreativitas mahasiswa, nilai-nilai softskill dan tentunya kemampuan berfikir kritis mahasiswa dalam proses pembelajaran. Tujuan penelitian ini yaitu menciptakan suatu produk model pembelajaran aktif berbasis inquiry yang dapat meningkatkan kemampuan berfikir tingkat tinggi sekaligus mampu mengasah softsill mahasiswa dalam pengajaran kimia khususnya pada materi stuktur atom dan stoikiometri yang terlihat dari peningkatan hasil belajar kimia. Sampel penelitian mahasiswa yang mengikuti mata kuliah kimia dasar TA 2021/ 2022 di FKIP Universitas HKBP Nommensen Medan. Adapun prosedur penelitian meliputi 4 tahapan sesuai dengan pendekatan ADIE yang dijabarkan menjadi: (1) analisis kebutuhan, (2) perancangan sumber belajar dan model pembelajaran aktif berbasis inquiry, (3) implementasi, dan (4) evaluasi. Model pembelajaran MPABI didesain dengan menggunakan bantuan multimedia canva dan video pembelajaran. Hasil penelitian menyatakan bahwa produk pengembangan model pembelajaran aktif berbasis inquiry dan perangkat pembelajaran dinyatakan valid, praktis, dan efektif dalam peningkatan kemampuan tingkat tinggi mahasiswa. Model pembelajaran aktif berbasis inquiry mempunyai 6 sintaks pembelajaran yang telah dimodifikasi yaitu: (1) tahap Orientasi Masalah melalui pengajuan pertanyaan, (2) tahap merumuskan masalah, (3) merumuskan hipotesis dengan mengumpulkan data dan bukti yang mendukung, (4) tahap eksplorasi konsep dengan penjelasan dan pengetahuan ilmiah, (5) pengujian hipotesis (6) menarik kesimpulan, (7) refleksi diri dan evaluasi pembelajaran. Analisis statistik dari data yang diperoleh menunjukkan penerapan model pembelajaran aktif berbasis inquiry sangat efektif dalam peningkatan kemampuan berfikir tingkat tinggi pada pengajaran kimia. Peneliti menyarankan agar model pembelajaran aktif berbasis inquiry dapat diimplementasikan dan diterapkan dalam pengajaran kimia dan sains. Kontribusi ilmiah sebagai produk hasil penelitian ini telah dipublikasikan dalam prosiding seminar Internasional di tahun 2021 pada satu judul artikel yakni *The Development and Implementation of An Innovative Inquiry-Based Learning to Build Students' Higher Order Thinking Skills in Teaching of Inorganic Reactions*

Kata kunci: Model pembelajaran, Berbasis inquiry, Berfikir tingkat tinggi, Pengajaran kimia, Multimedia canva

ABSTRACT

ERNA HELENA M TAMPUBOLON: Development of an Inquiry-Based Active Learning Model to Develop Students' Higher Order Thinking Skills (HOTS) in General Chemistry Teaching. Dissertation. Field. Medan State UniversityPostgraduate Program, 2024

The inquiry-based active learning model (MPABI) is a learning model used to improve high level thinking abilities. Because MPABI can contribute to increasingmotivation to learn chemistry, student creativity, soft skills values and of course student' critical thinking abilities in the learning process.The aim of this research isto create an inquiry-based active learning model product that can improve high- level thinking skills while also being able to sharpen students' soft skills in teachingchemistry, especially in atomic structure and stoichiometry material, which can beseen from the improvement in chemistry learning outcomes. Research sample of students taking basic chemistry courses for FY 2021/2022 at FKIP HKBP Nommensen University, Medan. The research procedure includes 4 stages inaccordance with the ADIE approach which are described as: (1) needs analysis, (2) designing learning resources and inquiry-based active learning models, (3) implementation, and (4) evaluation. The MPABI learning model was designed using Canva multimedia assistance and learning videos. The research results statedthat the product development of inquiry-based active learning models and learning tools was declared valid, practical and effective in improving students' high-level abilities. The inquiry-based active learning model has 6 modified learning syntaxes,namely: (1) Problem orientation stage through asking questions, (2) problem formulation stage, (3) formulating a hypothesis by collecting supporting data and evidence, (4) concept explanations stage with explanations and scientific knowledge, (5) hypothesis testing, (6) drawing conclusions, and (7) self-reflection and learning evaluation. Statistical analysis of the data obtained shows that the application of the inquiry-based activelearning model is very effective in improving high-level thinking skills in chemistryteaching. Researchers suggest that the inquiry-based active learning model can be implemented and applied in teaching chemistry and science. Scientific contributions as a product of this research have been published in the proceedings of an international seminar in 2021 under one article title, namely *The Developmentand Implementation Of An Innovative Inquiry-Based Learning To Build Students' Higher Order Thinking Skills In Teaching Of Inorganic Reactions*

Keywords: Learning Model, Inquiry-Based, Higher Order Thinking, TeachingChemistry, Multimedia Canva