

ABSTRAK

Nurli Yanti Rumahorbo, NIM 4212431014 (2025) Pengembangan Modul Ajar Menggunakan Pendekatan Understanding by Design (UbD) Pada Materi Ikatan Kimia Kelas X Di SMA Negeri 4 Medan.

Penelitian ini bertujuan untuk mengembangkan modul ajar berbasis pendekatan *Understanding by Design (UbD)* pada materi ikatan kimia kelas X di SMA Negeri 4 Medan. Pendekatan UbD dipilih karena berfokus pada pencapaian pemahaman mendalam melalui desain pembelajaran yang terstruktur dan berorientasi pada hasil belajar. Model pengembangan yang digunakan dalam penelitian ini adalah model ADDIE, yang meliputi lima tahapan, yaitu: *analysis, design, development, implementation, dan evaluation*. Hasil penelitian menunjukkan bahwa modul ajar berbasis UbD memiliki validitas yang sangat baik dengan persentase kelayakan materi 87% dan kelayakan media 86% berdasarkan penilaian para ahli. Dari segi praktikalitas, modul ini mendapatkan respons positif dari peserta didik dengan skor rata-rata mencapai 93%, menunjukkan bahwa modul mudah digunakan dan dipahami. Selain itu, efektivitas modul juga terbukti cukup efektif dengan persentase *N-Gain* sebesar 73,58%. Kesimpulannya, modul ajar berbasis UbD pada materi ikatan kimia ini dinilai valid, praktis, dan efektif dalam meningkatkan pemahaman konsep kimia dan hasil belajar siswa.

Kata Kunci: Pengembangan Modul, *Understanding by Design (UbD)*, Ikatan Kimia, Model ADDIE, Pembelajaran Kimia

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ABSTRACT

Nurli Yanti Rumahorbo, NIM 4212431014 (2025) Development of Teaching Module Using Understanding by Design (UbD) Approach on Chemical Bonding Material for Class X at SMA Negeri 4 Medan.

This study aims to develop a teaching module based on the Understanding by Design (UbD) approach on chemical bonding material for class X at SMA Negeri 4 Medan. The UbD approach was chosen because it focuses on achieving in-depth understanding through structured learning design and is oriented towards learning outcomes. The development model used in this study is the ADDIE model, which includes five stages, namely: analysis, design, development, implementation, and evaluation. The results of the study showed that the UbD-based teaching module had very good validity with a percentage of material feasibility of 87% and media feasibility of 86% based on expert assessments. In terms of practicality, this module received a positive response from students with an average score of 93%, indicating that the module is easy to use and understand. In addition, the effectiveness of the module has also proven to be quite effective with an N-Gain percentage of 73.58%. In conclusion, the UbD-based teaching module on the chemical bond material is considered valid, practical, and effective in improving students' understanding of chemical concepts and learning outcomes.

Keywords: Module Development, Understanding by Design (UbD), Chemical Bonds, ADDIE Model, Chemistry Learning

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