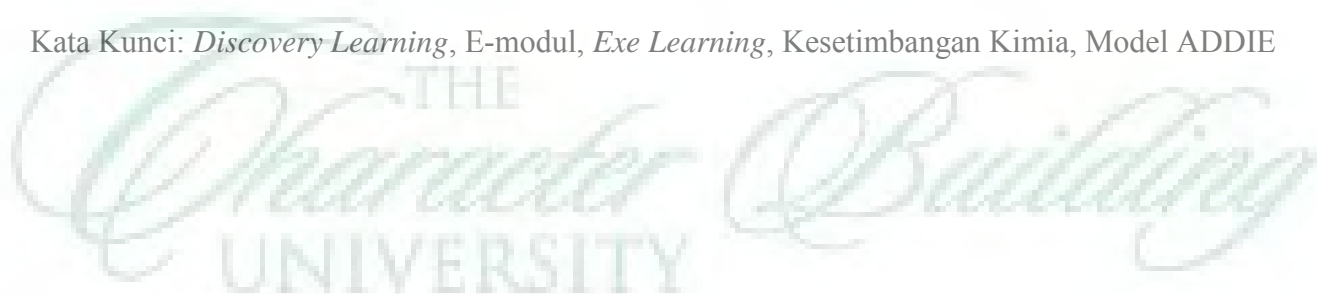


## ABSTRAK

**Anggela Goretty Sidabutar, NIM 4203331005 (2024), Pengembangan E-modul Kimia Berbantuan *Exe-learning* Berbasis Pendekatan *Discovery Learning* Pada Materi Keseimbangan Kimia.**

Penelitian ini bertujuan untuk mengetahui tingkat validitas, praktikalitas, dan efektivitas e-modul kimia berbantuan *Exe-learning* berbasis Pendekatan *Discovery Learning* pada materi keseimbangan kimia. Metode penelitian yang digunakan adalah *Research and Development* dengan model penelitian yang digunakan adalah model pengembangan ADDIE. Penelitian ini dilaksanakan di SMA Negeri 14 Medan. Subjek penelitian ini adalah guru kimia SMA sebanyak 2 orang, dosen kimia sebanyak 3 orang, dan siswa dalam satu kelas berjumlah 36 orang. Sampel dalam penelitian ini diambil secara *purposive sampling* sebanyak satu kelas yakni kelas XI MIPA 4. Berdasarkan hasil penelitian, tingkat validitas menunjukkan bahwa e-modul yang dikembangkan dinyatakan valid oleh validator dengan kriteria “Layak” dengan rata-rata validasi sebesar 90%, kemudian praktikalitas dari penggunaan e-modul diperoleh melalui hasil pengolahan angket respon siswa mendapatkan presentase sebesar 86,88% yang termasuk ke dalam kriteria “Sangat Menarik”, serta keefektifan dari penggunaan e-modul menunjukkan bahwa hasil belajar siswa yang di analisis dengan *One Sample T-Test* pada program SPSS 29.0 *for Windows* dengan taraf signifikansi 0,05 diperoleh nilai Sig. < 0,05 yaitu 0,002 yang menunjukkan bahwa hasil belajar siswa dengan menggunakan e-modul kimia berbantuan *Exe-Learning* berbasis pendekatan *Discovery Learning* pada materi keseimbangan kimia lebih besar dari 78.

Kata Kunci: *Discovery Learning*, E-modul, *Exe Learning*, Keseimbangan Kimia, Model ADDIE



## ABSTRACT

**Anggela Goretty Sidabutar, NIM 4203331005 (2024), Development of Chemistry E-modules assisted by *Exe-learning* based on *Discovery Learning* Approach on Chemical Equilibrium Material.**

This study aims to determine the level of validity, practicality, and effectiveness of chemistry e-modules assisted by Exe-learning based on the Discovery Learning Approach on chemical equilibrium material. The research method used is Research and Development with the research model used is the ADDIE development model. This research was conducted at SMA Negeri 14 Medan. The subjects of this research were 2 high school chemistry teachers, 3 chemistry lecturers, and 36 students in one class. The sample in this study was taken by purposive sampling as much as one class, namely class XI MIPA 4. Based on the results of the study, the validity level showed that the e-module developed was declared valid by the validator with the criteria “Eligible” with an average validation of 90%, then the practicality of the use of e-modules obtained through the results of processing student response questionnaires obtained a percentage of 86.88% which was included in the criteria “Very Interesting”, and the effectiveness of the use of e-modules showed that student learning outcomes were analyzed with One Sample T-Test on the SPSS 29.0 for Windows program with a significance level of 0.05 obtained a Sig value.  $<0.05$ , namely 0.002 which shows that student learning outcomes using chemistry e-modules assisted by Exe-Learning based on the Discovery Learning approach on chemical equilibrium material are greater than 78.

Keywords: ADDIE Model, Chemical Equilibrium, Discovery Learning, E-module, Exe Learning

