ABSTRAK

Bunga Apriani Sinaga, NIM 4202331002 (2024). Pengembangan *E*-Modul Pembelajaran Berbasis *Project Based Learning (PjBL)* pada Materi Sistem Periodik Unsur.

Penelitian ini bertujuan untuk mengetahui: (1) kelayakan *e*-modul pembelajaran berbasis *Project Based Learning (PjBL)* pada materi sistem periodik unsur berdasarkan instrumen penilaian BSNP yang terdiri dari kelayakan isi, kelayakan penyajian, kelayakan bahasa dan kelayakan kegrafikan, (2) praktikalitas *e*-modul pembelajaran berbasis *Project Based Learning (PjBL)* pada materi sistem periodik unsur melalui respon guru kimia dan peserta didik. Penelitian ini dilakukan dengan Penelitian dan Pengembangan (*Research and Development*) menggunakan model pengembangan 4D (*define, design, develop, disseminate)* yang dibatasi sampai tahap *develop*. Tahap awal yang dilakukan dalam penelitian ini adalah analisis awal, analisis ATP, dan analisis bahan ajar. Kemudian dilakukan perancangan dan pembuatan *e*-modul pembelajaran berbasis *Project Based Learning (PjBL)* pada materi sistem periodik unsur. Hasil akhir *e*-modul diubah dalam bentuk *flipbook* berbantuan aplikasi *Flip PDF Professional*. Kemudian *e*-modul divalidasi kelayakannya oleh 6 orang validator. Setelah dilakukan tahap validasi kelayakan dan tahap revisi atau perbaikan, maka dilakukan uji praktikalitas melalui respon 2 orang guru kimia dan 31 orang peserta didik. Hasil persentase kelayakan *e*-modul yang diperoleh pada penelitian adalah pada kelayakan isi sebesar 94%, pada kelayakan penyajian sebesar 95%, pada kelayakan bahasa sebesar 96%, dan pada kelayakan kegrafikan sebesar 85%, dimana keempat penilaian tersebut termasuk dalam kriteria "sangat layak". Pada uji praktikalitas oleh guru diperoleh persentase sebesar 96% dan oleh peserta didik diperoleh sebesar 90%, dengan kriteria "sangat praktis".

Kata kunci: *E*-modul, *Project Based Learning*, sistem periodik unsur, kelayakan, praktikalitas

ABSTRACT

Bunga Apriani Sinaga, NIM 4202331002 (2024). Development of E-Modules Based on Project Based Learning (PjBL) on Periodic System of Elements Material.

This research aims to determine: (1) the feasibility of e-module based on Project Based Learning (PjBL) on elemental periodic system material based on the BSNP assessment instrument which consists of appropriateness of content, appropriateness of presentation, appropriateness of language and appropriateness of graphics, (2) practicality of e-module based on Project Based Learning (PjBL) based learning module on periodic system of elements material through responses from chemistry teachers and students. This research was carried out with Research and Development (Research and Development) using the 4D development model (define, design, develop, disseminate) which is limited to the develop stage. The initial stages carried out in this research were initial analysis, ATP analysis, and analysis of teaching materials. Then design and creation of e-module based on Project Based Learning (PjBL) of the periodic system of elements were carried out. The final result of the e-module is converted into a flipbook with the help of the Flip PDF Professional application. Then the e-module was validated for its suitability by 6 validators. After carrying out the feasibility validation stage and the revision or improvement stage, a practicality test was carried out through the responses of 2 chemistry teachers and 31 students. The results of the e-module feasibility percentage obtained in the research were content feasibility of 94%, presentation feasibility of 95%, language feasibility of 96%, and graphic feasibility of 85%, where the four assessments were included in the "very feasible" criteria. ". In the practicality test, the percentage obtained by the teacher was 96% and by the students it was obtained at 90%, with the criterion "very practical".

Keywords: E-module, Project Based Learning, periodic system of elements, feasibility, practicality