

ABSTRAK

VINA REZEKYAH HASIBUAN. Pengembangan E-Modul Biomolekul Enzim Terintegrasi Model Pembelajaran Berbasis Proyek Sesuai Kurikulum KKNi. Tesis, Medan: Program Studi Pendidikan Kimia, Pascasarjana Universitas Negeri Medan, 2020.

Pengembangan media pembelajaran elektronik perlu dilakukan sesuai dengan perkembangan teknologi. Penelitian ini bertujuan untuk memperoleh E-modul Biomolekul Enzim terintegrasi model pembelajaran berbasis proyek sesuai kurikulum KKNi sebagai upaya meningkatkan motivasi dan kompetensi mahasiswa pada pembelajaran biokimia. Jenis penelitian ini adalah penelitian dan pengembangan yang meliputi: tahap (1) Analisis kebutuhan modul biokimia sesuai KKNi dan perkembangan teknologi, tahap (2) Pengembangan E-modul biomolekul enzim terintegrasi model pembelajaran berbasis proyek sesuai kurikulum KKNi menggunakan software flipbook maker yang dapat digunakan secara offline maupun online, tahap (3) Standarisasi E-Modul sesuai SNPT dan kelayakan media elektronik dan tahap (4) Implementasi terbatas dan tahap (5) evaluasi pada mahasiswa pendidikan Kimia, FMIPA Unimed sebanyak 2 kelas. Instrumen penelitian adalah angket validasi SNPT dan media elektronik, instrumen tes uraian dan angket motivasi mahasiswa. Data dianalisis secara deskriptif dan statistic independent sample T-test dua pihak program SPSS 21. Hasil analisis awal menunjukkan bahwa kelayakan isi dan bahasa buku cetak biokimia yang digunakan mahasiswa sesuai SNPT sedangkan pada kelayakan penyajian dan kegrafikan buku cetak biokimia masih kategori kurang valid sehingga perlu dilakukan pengembangan. Hasil penelitian menunjukkan: (1) e-modul biomolekul enzim terintegrasi model pembelajaran berbasis proyek bernilai rata-rata 3,45 kategori sangat valid sehingga e-modul yang dikembangkan sangat layak untuk digunakan dalam pembelajaran. (2) terdapat perbedaan peningkatan hasil belajar mahasiswa yang dibelajarkan menggunakan e-modul yang dikembangkan dari pada peningkatan hasil belajar mahasiswa yang menggunakan buku cetak biokimia ($N\text{-gain } 0,88 > 0,69$). (3) terdapat perbedaan motivasi belajar mahasiswa yang dibelajarkan menggunakan e-modul yang dikembangkan dari pada motivasi belajar mahasiswa yang menggunakan buku cetak biokimia (motivasi $84 > 62$). (4) terdapat korelasi positif dan signifikan antara motivasi dengan peningkatan hasil belajar mahasiswa yang dibelajarkan menggunakan e-modul yang dikembangkan dengan koefisien korelasi 0,718 (kriteria korelasi tinggi) dan koefisiensi determinasi sebesar 51,55 %.

Kata kunci: e-modul, enzim, pembelajaran berbasis proyek, kurikulum KKNi.

ABSTRACT

VINA REZEKYAH HASIBUAN. The Development of E-Module Biomolecules for enzyme integration Project-Based Learning Models in Accordance with the KKNi Curriculum. Thesis, Medan: Chemistry Education Study Program, Postgraduate School State University Of Medan, 2020.

Development of electronic learning media needs to be done in accordance with technological developments. This study aims to obtain an integrated Enzyme Biomolecule E-module in a project-based learning model according to the KKNi curriculum as an effort to increase student motivation and competence in biochemistry learning. This type of research is research and development which includes: stage (1) Analysis of the needs for biochemistry modules according to KKNi kurikulum and technological developments, stage (2) Development of E-module biomolecules for enzyme integration project-based learning models according to the KKNi curriculum using flipbook maker software that can be used simultaneously offline and online, stage (3) Standardization of E-Module according to SNPT and eligibility of electronic media and stage (4) Limited implementation and stage (5) evaluation of 2 classes of Chemistry education students, FMIPA Unimed. The research instrument was a SNPT validation questionnaire and electronic media, description test instrument and a student motivation questionnaire. The data were analyzed descriptively and statistically independent sample T-test for two parties of the SPSS 21 program. The results of the preliminary analysis showed that the feasibility of the content and language of the biochemical printed books used by students was in accordance with the SNPT, while the feasibility of presenting and graphic biochemical printed books was still in the less valid category so it needed to be done development. The results showed: (1) the e-module biomolecule enzyme integrated project-based learning model with an average score of 3.45 categories is very valid so that the e-module developed is very suitable for use in learning. (2) there is a difference in the improvement of student learning outcomes who are taught using the developed e-module than the increase in learning outcomes of students who use biochemistry printed books (N-gain $0.88 > 0.69$). (3) there is a difference in the learning motivation of students who are taught using the developed e-module from the learning motivation of students who use biochemical printed books (motivation $84 > 62$). (4) there is a positive and significant correlation between motivation and the improvement of student learning outcomes taught using the developed e-module with a correlation coefficient of 0.718 (high correlation criteria) and a coefficient of determination of 51.55%.

Keywords: e-modules, enzymes, project based learning, KKNi curriculum.