ABSTRAK

Bajoka Nainggolan, NIM 8156145002. "Pengembangan Model Pembelajaran Inovatif Berbasis Proyek Berorientasi KKNI Untuk Meningkatkan Kompetensi Mahasiswa"

Pembelajaran inovatif berbasis proyek menjadi salah satu pilihan yang tepat untuk mendorong mahasiswa belajar aktif yang dapat memfasilitasi mahasiswa belajar secara efektif, efisien dan berpusat kepada diri sendiri, sebagai strategi yang tepat untuk meningkatkan kompetensi dalam bidang kimia organik. Penelitian ini bertujuan untuk menemukan model pembelajaran MPjBL-KKNI yang valid, praktis, dan efektif, Tahapan penelitian terdiri atas: (1) Analisis kebutuhan sesuai kurikulum berbasis KKNI, (2) Pengembangan model beserta perangkatnya, (3) validasi standarisasi.oleh ahli (4) uji coba perorangan, dilanjutkan uji coba kelompok kecil dan uji coba kelompok besar/lapangan. (5) uji efektivitas, dan uji keterlaksanaan model.. Studi ini tergolong Penelitian dan pengembangan menggunakan metode ADDIE (analisys, design, development, implementasion, and evaluate) untuk mata kuliah Kimia Organik Fisik. Penelitian dilakukan di Jurusan Kimia Tahun Akademik 2018/2020. Sampel penelitian. Kurikulum berbasis KKNI, perangkat model, Buku Model, Buku guru, Buku siswa, validator ahli materi, ahli media, ahli pengembangan, dan ahli bahasa. Data penelitian diperoleh menggunakan beberapa paket instrument yang sudah valid untuk menguji kelayakan model, mengukur tingkat kepuasan mahasiswa, dan observasi kinerja. Kompetensi mahasiswa ditetapkan atas ketuntasan belajar berdasarkan evaluasi (pretest dan postest). Implementasi pembelajaran dilakukan menggunakan model MPjBL-KKNI pada kelompok eksperimen dan pembelajaran *direct instruction* pada kelas kontrol. Data diolah dan dianalisis menggunakan ANAVA secara regresi linear multivarian.. Temuan penelitian (1) model MPjBL-KKNI yang telah divalidasi ahli materi, ahli media, ahli R&D dan ahli bahasa, menunjukkan produk layak untuk digunakan, (2) Hasil pengujian efektivitas menunjukkan penggunaan produk pembelajaran memberikan efek nyata terhadap hasil belajar. Keefektifan pada uji coba kelompok kecil menunjukkan model MPjBL-KKNI berdampak terhadap hasil belajar mahasiswa sebesar (M=51,90%) tergolong kategori sedang dan efektif, pada uji coba kelompok besar sebesar (M=59,62%) .tergolong kategori sedang dan efektif, dan pada uji coba lapangan (classical) untuk kelompok eksperimen model MPjBL-KKNI berdampak nyata terhadap hasil belajar mahasiswa (M=70,41%) tergolong katerogi tinggi dan efektif, lebih tinggi dari kelompok control dengan model pembelajaran *Direct Instruction* (M=58,65%) tergolong kategori sedang. Hasil penilaian responden menunjukkan bahwa model MPjBL-KKNI tergolong sangat layak (M= 3,32). Persentase indek persepsi kepuasan mahasiswa tergolong sangat baik (M= 86,22%). Mahasiswa memiliki indeks kinerja sangat baik (M= 85,71%). Hasil belajar menunjukkan bahwa kompetensi mahasiswa pada bidang Kimia Organik Fisik sangat kompeten (M=92,4%). Pencapaian mahasiswa tergolong baik untuk ranah kognitif (90,8%), untuk ranah psikomotorik (97,6%). Sikap mahasiswa dalam kegiatan pembelajaran sangat berpengaruh secara simultan untuk meningkatkan kompetensi pengetahuan dan keterampilan. Disimpulkan bahwa model pembelajaran MPjBL-KKNI inovasi sangat efektif dipergunakan untuk membantu mahasiswa belajar aktif meningkatkan hasil belajarnya dan sekaligus untuk mencapai kompetensinya dalam bidang Kimia Organik Fisik. Produk hasil penelitian ini telah diterbitkan pada: (1) Jurnal Internasional bereputasi (Scopus Q2) dengan Judul: Developing Innovative Chemistry Laboratory Workbook Integrated with Project-Based Learning and Character-Based Chemistry (International Journal of Instruction, v13 n3 p895-908 Jul 2020), dan proceeding Internasional bereputasi dengan Judul: Development of Chemical Practicum Private Vocational School of Senior High School XII Class Based on Projects and Characters, Proceedings of the 4th Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2019)

Kata kunci : Inovasi dan pengembangan, bahan ajar, model pembelajaran, peningkatan kompetensi kimia mahasiswa

ABSTRACT

Bajoka Nainggolan, NIM 8156145002. "Development of Innovative Learning Models Based on KKNI Oriented Projects to Improve Student Competencies"

An innovative project-based learning is one of the right choices to encourage students to learn actively, which can facilitate students to learn in an effective, efficient and self-centered manner, as the right strategy to increase competence in the field of organic chemistry. This study aims to find a valid, practical, and effective MPjBL-KKNI learning model. The research stages consist of: (1) needs analysis according to the KKNI-based curriculum, (2) development of models and their devices, (3) validation of standardization by experts (4) individual trials, followed by small group trials and large group/field trials. (5) effectiveness test, and model implementation test. This study is classified as research and development using the ADDIE method (analysis, design, development, implementation, and evaluate) for the Physical Organic Chemistry course. The research was conducted at the Chemistry Department for the 2018/2020 academic year. Research sample. KKNI-based curriculum, model kits, model books, teacher books, student books, material expert validators, media experts, development experts, and language experts. The research data was obtained using several valid instrument packages to test the feasibility of the model, measure the level of student satisfaction, and observe performance. Student competence is determined by learning completeness based on evaluation (pretest and posttest). The implementation of learning was carried out using the MPjBL-KKNI model in the experimental group and direct instruction learning in the control class. The data were processed and analyzed using ANOVA with multivariate linear regression. Research findings (1) the MPjBL-KKNI model which has been validated by material experts, media experts, R&D experts and linguists, shows the product is feasible to use, (2) The results of the effectiveness test show the use learning products have a real effect on learning outcomes. The effectiveness of the small group trial shows that the MPjBL-KKNI model has an impact on student learning outcomes by (M = 51.90%) belonging to the medium category, in the large group trial (M = 59.62%). field trials (classical) for the experimental group MPjBL-KKNI model had a significant impact on student learning outcomes (M=70,41%) classified as high category, higher than the control group with the Direct Instruction learning model (M=58,65%) classified as medium category. The results of the respondent's assessment showed that innovative teaching materials were classified as very good (M = 3.32). The student satisfaction perception index is categorized very good (M = 86.22%). The students are having a very good performance index (M s= 85.91%). The results of learning data analysis showed that the competence of students in the field of Physical Organic Chemistry was assigned to be very good (M = 92.4%). Student achievement is classified as very good, successively for cognitive (90.8%), psychomotor (97.6%). The attitude of students in learning activities is very influential simultaneously to increase knowledge and skill competence. Student learning outcomes in the experimental group (M = 70.41) were higher than that in the control group (M = 58.65), and the two groups differed significantly (t-count 5.34 > t-table 1.658 (α = 0.05, db = n1+n2-2). It was concluded that the developed MPjBL-KKNI learning model was very effective in helping students learn actively to improve their learning outcomes and at the same time to achieve competence in the field of Physical Organic Chemistry. The products of this research have been published in: (1) Reputable International Journal (Scopus Q2) entitled: Developing Innovative Chemistry Laboratory Workbook Integrated with Project-Based Learning and Character-Based Chemistry (International Journal of Instruction, v13 n3 p895-908 Jul 2020), and a reputable international proceeding entitled: Development of Chemical Practicum Private Vocational School of Senior High School XII Class Based on Projects and Characters, Proceedings of the 4th Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2019)

Keywords: Innovation and development, teaching materials, learning models, increasing student chemical competence