ABSTRAK

Penelitian ini bertujuan untuk mengetahui kelayakan Ensiklopedia Bioteknologi berbasis literasi sains sebagai sumber belajar mahasiswa mata kuliah Bioteknologi menurut ahli materi, ahli desain, ahli pembelajaran dan keefektifan buku ensiklopedia Bioteknologi berbasis literasi sains. Pengembangan buku ensiklopedia menggunakan model desain ADDIE. Subjek dalam penelitian ini adalah mahasiswa semester enam Program Studi Pendidikan Biologi Universitas Negeri Medan. Sampel untuk penelitian ini diambil secara *simple random sampling* dengan cara undian sebanyak 56 mahasiswa. Instrumen pengumpulan data yang digunakan adalah angket, tes dan wawancara. Teknik analisis data menggunakan data kuantitatif dan kualitatif. Data kualitatif diperoleh dari angket kebutuhan, sedangkan data kuantitatif diperoleh dari skor penilaian kelayakan dan keefektifan produk. Hasil penelitian menunjukkan bahwa berdasarkan penilaian dari ahli materi sebesar 72% kategori baik tetapi perlu revisi kecil, ahli desain sebesar 86% kategori sangat baik tetapi perlu revisi kecil, ahli pembelajaran sebesar 94% kategori sangat baik tetapi perlu revisi kecil, tanggapan dosen sebesar 85,5% kategori sangat baik tetapi perlu revisi kecil dan tanggapan mahasiswa sebesar 87% kategori sangat baik tanpa revisi. Hasil uji t yang diperoleh pada kelas eksperimen dan kelas kontrol adalah sebesar 9,344 > 2,002 dengan signifikan $\alpha = 0,05$ sehingga dapat disimpulkan bahwa terdapat perbedaan yang signifikan (nyata) kemampuan literasi sains mahasiswa pada kelas eksperimen dengan kelas kontrol yang menandakan bahwa ensiklopedia Bioteknologi berbasis literasi sains memberikan pengaruh yang efektif.

Kata Kunci: Pengembangan Buku Ensiklopedia, Bioteknologi, Kemampuan Literasi Sains

ABSTRACT

This research aims to determine the suitability of the Biotechnology Encyclopedia based on scientific literacy as a learning resource for Biotechnology students according to material experts, design experts, learning experts and the effectiveness of the Biotechnology Encyclopedia book based on scientific literacy. Development of an encyclopedia book using the ADDIE design model. The subjects in this research were sixth semester students of the Biology Education Study Program, Medan State University. The sample for this research was taken using simple random sampling by drawing lots from 56 students. The data collection instruments used were questionnaires, tests and interviews. Data analysis techniques use quantitative and qualitative data. Qualitative data was obtained from a needs questionnaire, while quantitative data was obtained from product feasibility and effectiveness assessment scores. The research results showed that based on the assessment of material experts, 72% were in the good category but needed minor revisions, design experts were in the very good category but needed minor revisions, 86% were in the very good category but needed minor revisions, learning experts were in the very good category but needed minor revisions, 94%, lecturer responses were 85%. 5% were in the very good category but needed minor revisions and 87% of student responses were in the very good category without revisions. The t test results obtained in the experimental class and control class were 9.344 > 2.002 with a significant α = 0.05 so it can be concluded that there is a significant (real) difference in the scientific literacy abilities of students in the experimental class and the control class which indicates that the Biotechnology encyclopedia is based on scientific literacy provides an effective influence.

Keywords: Encyclopedia Book Development, Biotechnology, Scientific Literacy Ability