ABSTRAK

Widya Pinondang Sirait. Pengembangan Modul Berbasis Inkuiri Pada Materi Ekosistem Untuk Meningkatkan Kemampuan Berpikir Kritis Siswa di Kelas X SMA Negeri 3 Tebing Tinggi. Tesis. Medan: Program Studi Pendidikan Biologi, Pascasarjana UNIMED, 2024.

Penelitian ini bertujuan untuk mengembangkan modul berbasis inkuiri pada materi ekosistem yang layak, praktis dan efektif untuk meningkatkan kemampuan berpikir kritis siswa di kelas X SMA. Penelitian ini termasuk jenis penelitian pengembangan menggunakan model ADDIE. Subjek penelitian adalah siswa kelas X SMA Negeri 3 Tebing Tinggi sebanyak 2 kelas terdiri dari kelas eksperimen (34 siswa) dan kelas kontrol (34 siswa). Data penelitian dikumpulkan melalui lembar validasi ahli, lembar observasi, angket serta instrumen tes. Teknik analisis data yang digunakan meliputi analisis kelayakan, kepraktisan dan analisis keefektifan modul dengan pendekatan *independent sampel t-test*. Hasil penelitian dan pengembangan menunjukkan bahwa modul berbasis inkuiri pada materi ekosistem kelas X SMA telah memenuhi kriteria sangat layak berdasarkan penilaian tim validator ahli materi (85,1%) maupun penilaian tim validator ahli media/desain (94,0%); telah memenuhi kriteria sangat praktis berdasarkan hasil pengamatan aktivitas guru (89,0%) dan aktivitas siswa (83,8%); modul juga efektif diterapkan untuk meningkatkan kemampuan berpikir kritis siswa yang dibuktikan dari persentase ketuntasan belajar klasikal siswa kelas eksperimen yang mencapai 97,1% dan pengujian secara statistik dengan nilai $t_{hitung} > t_{tabel}$ (4,945 > 1,665) dan nilai probabilitas sebesar 0,000 < 0,01. Guru biologi memberikan respon yang sangat baik (86,3%) terhadap modul yang dihasilkan, serta rata-rata siswa juga memberikan respon yang tergolong baik (79,9%).

Kata Kunci: Ekosistem, Inkuiri, Kemampuan Berpikir Kritis, Modul

ABSTRACT

Widya Pinondang Sirait. Development of Inquiry-Based Modules on Ecosystem Material to Improve Students' Critical Thinking Skills in Class X of SMA Negeri 3 Tebing Tinggi. Thesis. Medan: Biology Education Study Program, Postgraduate, UNIMED, 2024.

This study aims to develop an inquiry-based module on ecosystem material that is feasible, practical and effective to improve critical thinking skills of students in class X of SMA. This research is a type of development research using the ADDIE model. The subjects of the study were students of class X of SMA Negeri 3 Tebing Tinggi consisting of 2 classes consisting of an experimental class (34 students) and a control class (34 students). Research data were collected through expert validation sheets, observation sheets, questionnaires and test instruments. Data analysis techniques used include feasibility analysis, practicality and module effectiveness analysis with an independent sample t-test approach. The results of the research and development show that the inquiry-based module on the ecosystem material for grade X SMA has met the criteria of being very feasible based on the assessment of the expert material validator team (85.1%) and the assessment of the expert media/design validator team (94.0%); has met the criteria of being very practical based on the results of observations of teacher activities (89.0%) and student activities (83.8%); the module is also effectively applied to improve students' critical thinking skills as evidenced by the percentage of classical learning completion of experimental class students reaching 97.1% and statistical testing with a calculated $t_{value} > t_{table}$ (4.945 > 1.665) and a probability value of 0.000 < 0.01. Biology teachers gave a very good response (86.3%) to the module produced, and on average students also gave a fairly good response (79.9%).

Keywords: Critical Thinking Skills, Ecosystem, Inquiry, Module