

ABSTRAK

KARTIKA. NIM: 8236173006. Pengembangan Ensiklopedia Tumbuhan Langka Di Hutan Agrowisata Taman Eden 100 Tobasa Berbasis Literasi Sains Pada Mata Kuliah Taksonomi Tumbuhan. Program Pascasarjana Universitas Negeri Medan 2025.

Tumbuhan langka di Indonesia merupakan kekayaan hayati yang memiliki peran penting dalam menjaga keseimbangan ekosistem serta berpotensi besar sebagai sumber belajar kontekstual dalam pendidikan biologi. Namun, pemanfaatan potensi lokal tersebut sebagai bahan ajar berbasis literasi sains pada mata kuliah Taksonomi Tumbuhan masih terbatas sehingga pembelajaran cenderung bersifat teoritis dan kurang bermakna. Penelitian ini bertujuan untuk mengembangkan dan menguji kelayakan dan efektivitas Ensiklopedia Tumbuhan Langka di Hutan Agrowisata Taman Eden 100 Tobasa Berbasis Literasi Sains sebagai bahan ajar pada mata kuliah Taksonomi Tumbuhan. Penelitian ini menggunakan model pengembangan ADDIE yang meliputi tahap (*Analysis, Design, Development, Implementation, dan Evaluation*). Subjek penelitian terdiri atas validator ahli materi, ahli pembelajaran, ahli desain, narasumber pengelola Taman Eden 100 Tobasa, dua dosen pengampu mata kuliah Taksonomi Tumbuhan, serta mahasiswa S-1 Pendidikan Biologi Universitas Negeri Medan yang telah menempuh mata kuliah Taksonomi Tumbuhan. Instrumen yang digunakan mencakup lembar validasi, angket respons dosen dan mahasiswa, serta tes hasil belajar (*pretest* dan *posttest*). Analisis efektivitas dilakukan menggunakan uji N-Gain untuk mengetahui peningkatan hasil belajar mahasiswa setelah menggunakan ensiklopedia. Hasil penelitian menunjukkan bahwa produk yang dikembangkan “sangat layak” berdasarkan validasi ahli materi (91,2%), ahli pembelajaran (90,6%), dan ahli desain (89,8%). Respons dosen dan mahasiswa juga sangat baik dengan rata-rata tanggapan lebih dari 90%. Berdasarkan hasil uji efektivitas, nilai rata-rata *pretest* mahasiswa sebesar 49,07 meningkat menjadi 82,40 pada *posttest*, dengan nilai N-Gain sebesar 0,67 (67,17%), termasuk dalam kategori “cukup efektif”. Peningkatan paling signifikan terjadi pada kemampuan menjelaskan fenomena ilmiah, menafsirkan data, dan mengambil keputusan berbasis sains sesuai indikator literasi sains OECD (2025). Dengan demikian, ensiklopedia ini dinyatakan “sangat layak” dan “cukup efektif” digunakan sebagai bahan ajar berbasis literasi sains. Produk ini tidak hanya meningkatkan hasil belajar kognitif mahasiswa, tetapi juga menumbuhkan rasa ingin tahu ilmiah, kepedulian terhadap konservasi, dan kesadaran ekologis terhadap pelestarian flora langka di Indonesia.

Kata Kunci: Ensiklopedia, Tumbuhan Langka, Taman Eden, Literasi Sains.

ABSTRACT

KARTIKA. Student ID: 8236173006. Development of a Science-Literacy-Based Encyclopedia of Rare Plant Species in the Agrotourism Forest of Taman Eden 100 Tobasa for the Plant Taxonomy Course. Graduate Program, Universitas Negeri Medan, 2025.

Rare plant species in Indonesia are valuable biological resources that play an important role in maintaining ecosystem balance and have great potential as contextual learning resources in biology education. However, the use of this local potential as science literacy-based teaching materials in Plant Taxonomy courses is still limited, causing learning activities to be more theoretical and less meaningful. This study aims to develop, validate, and evaluate the feasibility and effectiveness of the *Scientific Literacy-Based Encyclopedia of Rare Plants in the Agrotourism Forest of Taman Eden 100 Tobasa* as instructional material for the Plant Taxonomy course. The research employed the ADDIE development model, encompassing the stages of Analysis, Design, Development, Implementation, and Evaluation. The research subjects included content experts, instructional experts, design experts, resource persons from the Taman Eden 100 Tobasa management team, two lecturers of the Plant Taxonomy course, and undergraduate Biology Education students at Universitas Negeri Medan who had completed the course. The instruments used consisted of validation sheets, lecturer and student response questionnaires, and learning outcome tests (pretest and posttest). Effectiveness was analyzed using the N-Gain test to determine students' learning improvement after using the encyclopedia. The results indicate that the developed product is "highly feasible," as evidenced by expert validation scores from content (91.2%), instructional (90.6%), and design experts (89.8%). Lecturer and student responses were also highly positive, with average scores exceeding 90%. The effectiveness test revealed an increase in the average student score from 49.07 (pretest) to 82.40 (posttest), with an N-Gain value of 0.67 (67.17%), categorized as "moderately effective." The most notable improvement occurred in students' abilities to explain scientific phenomena, interpret data, and make science-based decisions in accordance with OECD scientific literacy indicators (2025). These findings suggest that the encyclopedia is "highly feasible" and "moderately effective" for use as scientific literacy-based teaching material. Furthermore, the product not only enhances students' cognitive learning outcomes but also cultivates scientific curiosity, conservation awareness, and ecological responsibility regarding the preservation of rare plant species in Indonesia.

Keywords: Encyclopedia, Rare Plants, Taman Eden, Scientific Literacy.