

ABSTRAK

Yuli Varananda Hasibuan. Pengembangan Instrumen Penilaian Hasil Belajar Bioteknologi Kelas XII SMA Berbasis HOTS dan Kemampuan Berpikir Kritis. Tesis. Medan: Program Studi Pendidikan Biologi, Pascasarjana UNIMED, 2024.

Penelitian ini bertujuan untuk mengembangkan instrumen penilaian hasil belajar materi bioteknologi kelas XII SMA berbasis HOTS dan kemampuan berpikir kritis, menggunakan model 4D. Pengumpulan data dilakukan melalui wawancara, lembar validasi ahli dan angket respon guru. Teknik analisis data mencakup analisis kelayakan berdasarkan penilaian validator ahli, analisis butir tes dan analisis respon guru biologi. Instrumen dikembangkan dalam bentuk pilihan berganda (50 soal) berbasis HOTS dan bentuk esai/uraian (5 soal) berbasis kemampuan berpikir kritis. Hasil penelitian menunjukkan bahwa hasil penilaian validator ahli diperoleh rerata persentase sebesar 89,2% (sangat layak). Hasil ujicoba dan analisis butir tes, untuk soal pilihan berganda sebanyak 37 soal valid dan 3 soal tidak valid (gugur) serta dinyatakan reliabel, dengan tingkat kesukaran sebanyak 7 soal sukar, 30 soal sedang dan 3 soal mudah, serta daya pembeda sebanyak 11 soal cukup dan 29 soal baik. Untuk soal esai/uraian, semuanya (5 soal) dinyatakan valid dan reliabel, dengan tingkat kesukaran sebanyak 1 soal sukar dan 4 soal sedang, serta daya pembeda sebanyak 4 soal cukup dan 1 soal baik. Respon guru biologi diperoleh rata-rata persentase 82,0% (sangat baik). Berdasarkan data tersebut, disimpulkan bahwa instrumen penilaian hasil belajar materi bioteknologi kelas XII SMA berbasis HOTS dan kemampuan berpikir kritis telah dinyatakan sangat layak dengan tingkat kehandalan yang tinggi untuk digunakan sebagai alat dalam mengukur kemampuan HOTS dan berpikir kritis siswa pada pembelajaran bioteknologi kelas XII SMA.

Kata Kunci: Bioteknologi, HOTS, Instrumen Penilaian, Kemampuan Berpikir Kritis



ABSTRACT

Yuli Varananda Hasibuan. Development of an Instrument for Assessment of Biotechnology Learning Outcomes for Class XII SMA Based on HOTS and Critical Thinking Ability. Thesis. Medan: Biology Education Study Program, Postgraduate UNIMED, 2024.

This research aims to develop an instrument for assessing learning outcomes for class XII SMA biotechnology material based on HOTS and critical thinking skills, using the 4D model. Data collection was carried out through interviews, expert validation sheets and teacher response questionnaires. Data analysis techniques include feasibility analysis based on expert validator assessments, test item analysis and biology teacher response analysis. The instrument was developed in multiple choice form (50 questions) based on HOTS and essay/description form (5 questions) based on critical thinking skills. The research results showed that the expert validator assessment results obtained an average percentage of 89.2% (very feasible). The results of the trial and analysis of test items, for multiple choice questions there were 37 valid questions and 3 invalid questions (failed) and were declared reliable, with a difficulty level of 7 difficult questions, 30 medium questions and 3 easy questions, and the distinguishing power of 11 questions was sufficient. and 29 good questions. For the essay/description questions, all of them (5 questions) were declared valid and reliable, with a difficulty level of 1 difficult question and 4 medium questions, as well as a distinguishing power of 4 fair questions and 1 good question. Biology teacher responses obtained an average percentage of 82.0% (very good). Based on these data, it is concluded that the assessment instrument for learning outcomes in biotechnology material in class XII SMA, based on HOTS and critical thinking skills has been declared very suitable with a high level of reliability to be used as a tool in measuring students' HOTS and critical thinking abilities in biotechnology learning in class XII SMA.

Keywords: Assessment Instrument, Biotechnology, Critical Thinking Ability, HOTS

