

## **Pengembangan Tes Keterampilan Proses Sains Pada Materi Ekosistem Kelas X SMA Swasta Masehi GBKP Berastagi**

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### **Abstrak**

Penelitian ini bertujuan untuk mengembangkan tes keterampilan proses sains pada materi ekosistem kelas X dan mengetahui kelayakan serta efektivitasnya. Keterampilan proses sains yang diukur meliputi mengamati, berhipotesis, meramalkan, merencanakan percobaan, menghitung, klasifikasi, berkomunikasi, dan interpretasi. Penelitian ini merupakan penelitian pengembangan atau Research And Development (R&D). Tes dikembangkan melalui tahap analisis kebutuhan, pengumpulan data, penyusunan produk, validasi ahli tahap pertama, revisi produk, validasi ahli tahap kedua, revisi produk, uji efektivitas produk dan produk final. Data penelitian berupa tingkat kelayakan dan efektivitas tes keterampilan proses sains. Populasi yang digunakan dalam penelitian ini adalah seluruh buku biologi kelas X, dan sampel yang digunakan adalah buku biologi siswa yang digunakan di SMA Swasta Masehi GBKP Berastagi. Sedangkan populasi pada uji efektivitas berjumlah 270 siswa kelas X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub> dan X<sub>6</sub> dan sampel yang digunakan berjumlah 84 siswa kelas X<sub>1</sub> dan X<sub>4</sub>. Tingkat kelayakan tes keterampilan proses sains diukur dengan angket menggunakan skala Likert. Sedangkan untuk uji efektivitas dihitung dengan menggunakan analisis gain score dan uji beda. Hasil penelitian yaitu tes keterampilan proses sains materi ekosistem berupa soal pilihan berganda dengan lima alternatif jawaban sebanyak 35 soal. Persentase tingkat kelayakan tes menurut ahli keterampilan proses sains adalah 96,42% (sangat baik), dan menurut ahli materi dan konstruksi adalah 98,57% (sangat baik). Untuk analisis gain score, diperoleh 0,29 (rendah) pada kelas kontrol dan 0,42 (sedang) pada kelas eksperimen. Sedangkan pada uji beda, diperoleh bahwa nilai  $t_{hitung} > t_{tabel}$  yakni  $2,35 > 1,66$  yang menunjukkan bahwa tes keterampilan proses sains efektif digunakan untuk mengukur keterampilan proses sains siswa pada materi ekosistem. Berdasarkan hasil penelitian dapat disimpulkan bahwa, tes keterampilan proses sains pada materi ekosistem telah berhasil dikembangkan, layak dan efektif digunakan untuk mengukur keterampilan proses sains siswa pada materi ekosistem, dan mengandung aspek mengamati, berhipotesis, meramalkan, merencanakan percobaan, menghitung, klasifikasi, berkomunikasi dan interpretasi.

**Kata kunci: Tes Keterampilan Proses Sains, Materi Ekosistem, Efektivitas**

## **Development of Science Process Skills Tests on Ecosystem Materials Class X Private High School Masehi GBKP Berastagi**

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### **Abstract**

This research aims to develop science process skill test on ecosystem topic at class X and to know its feasibility and effectiveness. Scientific process skills that are measured include observing, hypothesizing, predicting, planning experiments, counting, classifying, communicating, and interpreting. This research is a research development. The test is developed through the needs analysis phase, data collection, product preparation, first stage expert validation, product revision, second stage expert validation, product revision, product effectiveness test and final product. Research data in the form of feasibility level and effectiveness of science process skill test. The population research in this study was the entire book of class X biology, and the sample was the biology book of students used in Berastagi Public Senior High School GBKP. While the population on the effectiveness test amounted to 270 students class X1, X2, X3, X4, X5 and X6 and the sample used amounted to 84 students class X1 and X4. The feasibility level of the science process skill test is measured by a questionnaire using a Likert scale. While for effectiveness test is calculated by using gain score analysis and different test. The result of the research is a science process skill test about ecosystem material science process in the form of multiple choice questions with five alternative answers as many as 35 questions. The percentage of feasibility test level according to expert of science process skill is 96.42% (very good), and according to material and construction expert is 98.57% (very good). For gain score analysis, 0.29 (low) in the control class and 0.42 (medium) in the experimental class were obtained. While on different test, it is found that  $t_{count} > t_{table}$  is  $2.35 > 1.66$  indicating that science process skill test is effectively used to measure students' science process skill in ecosystem material. Based on the results of research can be concluded that, science process skill test about ecosystem topic has been successfully developed, feasible, and effectively used to measure science process skill of student at ecosystem topic, and contains aspects of observing, hypothesizing, predicting, planning of experiments, calculating, classifying, communicating and interpreting.

**Keywords: Science Process Skills Tests, Ecosystem Topic, Effectiveness**