

## ABSTRACT

**Oktaviyani Br Tarigan NIM: 4161141041. Development Of Biology Student Worksheets Based On Science Process Skills On Excretory System Material For Class Xi Mia Students At Imelda Medan Private SMA. Thesis, Department of Biology, Biology Education Study Program, Faculty of Mathematics and Natural Science, State University of Medan 2021.**

This study aims to determine the effectiveness of the Science Process Skill-Based LKPD which was developed on the excretory system material to improve student learning outcomes in class XI MIA SMA Swasta Imelda Medan. The research uses a modified 4-D model of instructional development design which includes several stages, namely the definition stage which includes the front end analysis stage, student characteristics, concept analysis, formulating goals. The second stage is design which includes material collection, format selection, initial design of LKPD and draft I. The third stage is development which includes expert validation, revision, teacher assessment in the field of study, revision of teacher assessment in the field of study, individual trials, small group test, limited group test, and draft II, and dissemination aims to test the effectiveness of using the product that has been developed. The research subjects were 31 students of class XI MIA 1 and one biology teacher at Imelda Private High School Medan. The resulting product is a student worksheet (LKPD) on the science process skill-based excretory system material. The results of the assessment by material experts showed an average of 100% very feasible criteria, assessments by learning experts showed an average of 91.67% very feasible criteria, and assessment by design experts 83.4% very feasible criteria. The results of the assessment by the teacher of the field of study showed that an average of 96.05% of the criteria was very feasible. The results of student responses showed an average of 93.54% including positive criteria. The effectiveness test of the product developed was declared effective with an N-gain value of 0.60 with the "Medium" criteria. The results showed that the LKPD on the excretory system material could be used in the learning process.

***Keywords: Development of student worksheets, Science process skills, Excretory system***



## ABSTRAK

**Oktaviyani Br Tarigan NIM: 4161141041. Pengembangan Lembar Kerja Peserta Didik (Lkpd) Biologi Berbasis Keterampilan Proses Sains Pada Materi Sistem Ekskresi Bagi Siswa Kelas Xi Mia Di Sma Swasta Imelda Medan. Skripsi , Jurusan Biologi Program Studi Pendidikan Biologi, Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Negeri Medan 2021.**

Penelitian ini bertujuan untuk mengetahui efektivitas LKPD Berbasis Keterampilan Proses Sains yang dikembangkan pada materi sistem ekskresi terhadap peningkatan hasil belajar siswa kelas XI MIA SMA Swasta Imelda Medan. Penelitian menggunakan desain pengembangan instruksional model 4-D yang dimodifikasi meliputi beberapa tahapan yaitu tahap pendefinisian (*define*) yang meliputi dari tahap analisis ujung depan, karakteristik siswa, analisis konsep, merumuskan tujuan. Tahap kedua perancangan (*design*) yang meliputi pengumpulan materi, pemilihan format, desain awal LKPD dan draf I. Tahap ketiga adalah pengembangan (*develop*) yang meliputi validasi ahli, revisi, penilaian guru bidang studi, revisi penilaian guru bidang studi, uji coba perorangan, uji kelompok kecil, uji kelompok terbatas, dan draf II, dan penyebaran (*disseminate*) bertujuan untuk menguji efektivitas penggunaan produk yang telah dikembangkan. Subjek penelitian adalah 31 siswa kelas XI MIA 1 dan satu orang guru biologi SMA Swasta Imelda Medan. Produk yang dihasilkan berupa lembar kerja peserta didik (LKPD) pada materi sistem ekskresi berbasis keterampilan proses sains. Hasil penilaian oleh ahli materi menunjukkan rata-rata 100% kriteria sangat layak, penilaian oleh ahli pembelajaran menunjukkan rata-rata 91,67% kriteria sangat layak, dan penilaian oleh ahli desain 83,4% kriteria sangat layak. Hasil penilaian oleh guru bidang studi menunjukkan rata-rata 96,05% kriteria sangat layak. Hasil tanggapan peserta didik menunjukkan rata-rata 93,54% termasuk kriteria positif. Uji keefektifan produk yang dikembangkan dinyatakan efektif dengan nilai N-gain 0,60 dengan kriteria “Sedang”. Hasil penelitian menunjukkan bahwa LKPD pada materi sistem ekskresi dapat digunakan dalam proses pembelajaran.

**Kata Kunci: Lembar Kerja Peserta Didik, Keterampilan Proses Sains, Sistem Ekskresi**

