

## ABSTRAK

**Rifka Aulya, NIM 4203151020 (2025), Pengaruh Model *Problem Based Learning* dengan Pendekatan *Science, Technology, Engineering, and Mathematics* terhadap Literasi Sains dan Kemampuan Berpikir Kritis Siswa pada Materi Sistem Ekskresi Manusia.**

Penelitian ini berjudul Pengaruh Model *Problem Based Learning* dengan Pendekatan *Science, Technology, Engineering, and Mathematics* terhadap Literasi Sains dan Kemampuan Berpikir Kritis Siswa pada Materi Sistem Ekskresi Manusia. Sampel penelitian ini terdiri dari 2 kelas yang berjumlah 60 siswa yaitu kelas eksperimen dan kelas kontrol yang masing-masing berjumlah 30 siswa. Instrumen yang digunakan terdiri dari instrumen tes literasi sains yang berbentuk pilihan ganda berjumlah 20 soal dan instrumen tes kemampuan berpikir kritis berbentuk essay berjumlah 6 soal. Sebelum diberi perlakuan berbeda terlebih dahulu dilakukan *pretest* pada kedua sampel, kemudian dilanjutkan pembelajaran menggunakan model *problem based learning* (PBL) dengan pendekatan *science, technology, engineering, and mathematics* (STEM) di kelas eksperimen dan pembelajaran menggunakan model PBL di kelas kontrol pada materi sistem ekskresi manusia, kemudian dilakukan *posttest* pada kedua sampel. Data penelitian dianalisis dengan uji manova. Setelah dilakukan pengujian hipotesis terhadap data *posttest* kedua kelas diperoleh nilai signifikan  $0,878 > 0,05$ , sehingga dapat disimpulkan terdapat pengaruh model PBL dengan pendekatan STEM terhadap literasi sains dan kemampuan berpikir kritis siswa.

**Kata kunci:** PBL, STEM, Literasi Sains, Kemampuan Berpikir Kritis, Sistem Ekskresi Manusia

## ABSTRACT

**Rifka Aulya, NIM 4203151020 (2025), The Influence of the Problem-Based Learning Model with a Science, Technology, Engineering, and Mathematics (STEM) Approach on Students' Scientific Literacy and Critical Thinking Skills in the Human Excretory System Material.**

This study is titled The Influence of the Problem-Based Learning Model with a Science, Technology, Engineering, and Mathematics (STEM) Approach on Students' Scientific Literacy and Critical Thinking Skills in the Human Excretory System Material. The research sample consists of two classes with a total of 60 students, divided into an experimental class and a control class, each comprising 30 students. The instruments used include a scientific literacy test in the form of 20 multiple-choice questions and a critical thinking skills test in the form of 6 essay questions. Before receiving different treatments, a pretest was conducted on both samples. The experimental class received learning using the Problem-Based Learning (PBL) model with a STEM approach, while the control class was taught using the PBL model without the STEM approach on the human excretory system material. After the learning process, a posttest was administered to both classes. The research data were analyzed using the MANOVA test. The hypothesis testing on the posttest data of both classes resulted in a significance value of  $0.878 > 0.05$ , indicating that the PBL model with a STEM approach significantly influences students' scientific literacy and critical thinking skills.

**Keywords:** PBL, STEM, Scientific Literacy, Critical Thinking Skills, Human Excretory System