ABSTRAK

CHELSEA ILES DWIYANTI: "Model *Problem Based Learning* Berbantu Penilaian Portofolio Untuk Meningkatkan Kompetensi Literasi Sains Pada Materi Bioproses Sel".

Kurangnya pemahaman siswa untuk mengaitkan konsep sains dengan ide-ide ilmiah, dapat diatasi dengan model *Problem Based Learning* yang menyajikan masalah sehingga meningkatkan literasi sains siswa. Penelitian ini bertujuan untuk menganalisis model pembelajaran *Problem Based Learning* (PBL) dengan bantuan penilaian portofolio untuk meningkatkan kompetensi literasi sains siswa pada materi bioproses sel. *Quasi experimental* jenis desain *nonequivalent control group* menerapkan dua kelas XI IPA 1 dan XI IPA 2. Data dikumpulkan melalui tes literasi sains, lembar observasi, dan evaluasi portofolio. Keterlaksanaan pembelajaran dengan dan tanpa model PBL berbantu penilaian portofolio pada materi bioproses sel diperoleh rata-rata 98,5% dan 94,5%. Peningkatan kompetensi literasi sains pada kelas dengan model PBL lebih tinggi dari kelas tanpa model PBL, yaitu dengan nilai *N-Gain* 0,5 dan 0,4 berkriteria "sedang". Hasil uji hipotesis *Mann-Whitney* yang diperoleh yaitu 0,000 < 0,05 yang berarti dengan H_1 diterima. Pengaruhnya berada pada tingkat yang sedang, dibuktikan dengan hasil uji *Effect Size Cohen`s*. Kendala peserta didik pada kelas dengan model PBL sebesar 18%, sedangkan pada kelas tanpa model sebesar 20% kedua hasil tersebut menunjukkan bahwa sebagian kecil peserta didik mengalami kendala. Disimpulkan bahwa model pembelajaran *Problem Based Learning* berbantu penilaian portofolio berpengaruh positif terhadap kompetensi literasi sains pada materi bioproses sel.

Kata Kunci: Bioproses Sel, Literasi Sains, Penilaian Portofolio, *Problem Based Learning*.

ABSTRACT

CHELSEA ILES DWIYANTI: *" Problem Based Learning Model Assisted by Portfolio Assessment to Enhance Science Literacy Competence in Cell Bioprocess Material"*

The lack of students' understanding in connecting science concepts with scientific ideas can be addressed by the Problem Based Learning model, which presents problems to enhance students' science literacy. This study aims to analyze the Problem Based Learning (PBL) model with the aid of portfolio assessment to improve students' science literacy competence in cell bioprocess material. A quasi-experimental design of the non-equivalent control group type was applied to two classes, XI IPA 1 and XI IPA 2. Data were collected through science literacy tests, observation sheets, and portfolio evaluations. The implementation of learning with and without the PBL model assisted by portfolio assessment on cell bioprocess material obtained averages of 98.5% and 94.5%, respectively. The increase in science literacy competence in the class with the PBL model was higher than in the class without the PBL model, with N-Gain values of 0.5 and 0.4, categorized as "moderate." The results of the Mann-Whitney hypothesis test obtained were 0.000 < 0.05, which means H1 was accepted. The influence was at a moderate level, as evidenced by the results of the Cohen's Effect Size test. Student obstacles in the class with the PBL model were 18%, while in the class without the model, they were 20%; both results indicate that a small proportion of students experienced obstacles. It is concluded that the Problem Based Learning model assisted by portfolio assessment has a positive effect on science literacy competence in cell bioprocess material.

Keywords: *Cell Bioprocess, Portofolio Assessment, Problem Based Learning, Scientific Literacy.*