IMPLEMENTASI PENDEKATAN KONSTRUKTIVISME PADA MATERI PENCEMARAN LINGKUNGAN DALAM MENINGKATKAN KEMAMPUAN LITERASI KUANTITATIF DAN SIKAP ILMIAH SISWA SMA

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Abstrak

Penelitian ini bertujuan untuk menganalisis peningkatan kemampuan literasi kuantitatif dan hasil kemampuan sikap ilmiah melalui implementasi pendekatan pembelajaran konstruktivisme dengan model inkuiri terbimbing dan *learning cycle 5E* pada materi pencemaran lingkungan. Hal ini dilatarbelakangi oleh tuntutan perkembangan biologi di abad 21 yang berkembang ke arah sains yang lebih kuantitatif. Metode penelitian yang digunakan adalah *Quasi Experiment* dengan desain *Pretest-Posttest nonequivalent multiple-group design.* Pelaksanaan penelitian melibatkan 72 sampel siswa sebagai subjek, di dua kelas. Instrumen penelitian yang digunakan adalah tes uraian kemampuan literasi kuantitatif, angket sikap ilmiah siswa, lembar observasi keterlaksanaan pembelajaran, serta angket tanggapan siswa. Penilaian keefektivitasan pembelajaran dengan pendekatan konstruktivisme melalui inkuiri terbimbing dan kelas *learning cycle 5E*. Hasil implementasi menunjukkan terdapat peningkatan kemampuan literasi kuantitatif siswa ditunjukkan oleh rata-rata *N-Gain* yang diperoleh yaitu 0,50 di kelas inkuiri terbimbing dan 0,46 di kelas *learning cycle 5E*. Berdasarkan uji statistik, pendekatan konstruktivisme efektif meningkatkan kemampuan literasi kuantitatif. Indikator-indikator pada setiap kemampuan literasi kuantitatif yang meliputi kemampuan interpretasi, representasi, kalkulasi, asumsi, analisis dan komunikasi peserta didik mengalami peningkatan dalam kategori sedang, dengan rata-rata nilai *N-Gain* 0,48. Sedangkan pada Sikap ilmiah peserta didik sesudah pembelajaran pendekatan konstruktivisme memberikan dampak positif dengan rata-rata persentasi sebesar 75,60% Hasil penelitian juga menunjukkan bahwa respon siswa terhadap pembelajaran dengan konstruktivisme pada umumnya baik dan positif.

Kata kunci *: pendekatan konstruktivisme, kemampuan literasi kuantitatif, sikap ilmiah, pencemaran lingkungan*

Implementation of Constructivism Approach in Biology Learning to Improve the Quantitative Literacy Skills and Scientific Attitude of High School Students in the Subject of Environmental Pollution

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Abstract:

The aim of this study was to analyze the improvement of quantitative literacy skills and scientifical attitude ability through the implementation of constructivism learning approach using the guided inquiry model and learning cycle 5E in the subject of environmental pollution. The background of this study is the demand in biology development in 21st century that is progressing more to quantitative science. The method used in this study was Quasi Experiment with *the Matching-Only pretest-posttest control group design.* This study was involving 72 students as subject sample in 2 classes. The instruments used were pretest and posttest quantitative literacy skills in the form of essay questions, scientific attitude of students' questionnaires, conducted learning observation sheets, and the responses of teachers and students questionnaires. Technical analysis of the data was using constructivism approach through guided inquiry and learning cycle 5E class. The implementation results showed that the students' quantitative literacy skills were increased that could be seen from N-Gain average value 0.50 in guided inquiry class and 0.46 in learning cycle 5E class. From statistical test, the constructivism approach was effectively increasing the quantitative literacy skills. The indicators of each quantitative literacy skills such as interpretation, representation, calculation, assumption, analysis, and communication skills of students enhancement were in medium catagory, with N-Gain average value was 0.48. Meanwhile, the scientific attitude of students was improving after using constructivism approach and giving positive results for 75.60% in average. The results also showed that the students' response to constructivism learning in general is good and positive.

Keywords: constructivism approach, quantitative literacy skills, scientific attitudes, environmental pollution