

ABSTRAK

AI ILMIATI. Analisis Kemampuan Berpikir Kritis Peserta Didik Melalui Penerapan Pendekatan STEAM (Science, Technology, Engineering, Art, and Mathematics) Pada Materi Reaksi Redoks. Jakarta: Program Studi Pendidikan Kimia, Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Negeri Jakarta. Agustus 2018.

Penelitian ini bertujuan untuk menganalisis kemampuan berpikir kritis peserta didik melalui penerapan pendekatan STEAM pada materi reaksi redoks. Penelitian dilaksanakan di SMA Negeri 27 Jakarta pada semester genap tahun ajaran 2017/2018. Penelitian ini menggunakan metode kualitatif. Teknik pengumpulan data yang digunakan berupa observasi lapangan, wawancara, reflektif jurnal, tes kemampuan berpikir kritis, dan dokumentasi. Pembelajaran dilakukan dengan menerapkan enam tahapan model *project based learning*, yaitu memberikan pertanyaan esensial, membuat perencanaan proyek, menyusun jadwal proyek, memonitor kegiatan dan kemajuan proyek, menguji dan menilai hasil, dan mengevaluasi pengalaman. Model pembelajaran berbasis proyek ini dilakukan dengan mengintegrasikan masing-masing komponen STEAM ke dalam pembelajaran. Berdasarkan hasil penelitian, dapat disimpulkan bahwa lima dimensi kemampuan berpikir kritis peserta didik tersebut telah muncul selama penerapan pendekatan STEAM menggunakan model *project based learning*. Lima dimensi kemampuan berpikir kritis tersebut yaitu memberikan penjelasan sederhana, membangun keterampilan dasar, menyimpulkan, memberikan penjelasan lanjut, dan mengatur strategi dan taktik. Diantara lima dimensi kemampuan berpikir kritis tersebut, kualitas berpikir kritis peserta didik lebih dominan pada dimensi membangun keterampilan dasar dan dimensi mengatur strategi dan taktik, sedangkan kualitas berpikir kritis peserta didik yang masih rendah terdapat pada dimensi menyimpulkan. Penilaian proyek yang telah dibuat peserta didik memiliki nilai rata-rata yang sangat baik yaitu 3.87/4 dengan mempertimbangkan pembuatan produk, integrasi STEAM, dan produk yang dihasilkan.

Kata Kunci: *pendekatan STEAM, project based learning, berpikir kritis peserta didik*

ABSTRACT

AI ILMIATI. The Analysis of Students' Critical Thinking Ability through the Implementation of STEAM Approach (Science, Technology, Engineering, Art, and Mathematics) in Redox Reaction Topic. Jakarta: Chemistry Education Study Program, Faculty of Mathematics and Sciences, Universitas Negeri Jakarta. August 2018.

This research was aimed to analyze students' critical thinking ability through the implementation of STEAM Approach in Redox Reaction Topic. The research was conducted in the second semester of 2017/2018 academic year at SMA Negeri 27 Jakarta. This research used qualitative method. The data collection techniques used in this research were observations, interviews, reflective journals, critical thinking skills tests, and documentations. The learning processes were carried out by applying six stages of project based learning model, consisting of providing essential questions, designing project plans, arranging project schedules, monitoring the activities and progresses of projects, examining and assessing results, and evaluating experiences. This project-based learning model was conducted by integrating each components of STEAM to the learning processes. Based on the result, it was concluded that the five dimentions of students' critical thinking have appeared during the implementation of STEAM approach using the project-based learning model. The five dimentions of students' critical thinking were giving simple explanations, building basic skills, concluding, giving advanced explanations, and organizing strategies and tactics. Between the five dimentions of students' critical thinking, the qualities of students' critical thinking were highest in the dimention of building basic skills and organizing strategies and tactics, meanwhile, the lowest one was in concluding dimention. The assessment projects made by students had the excellent average about 3.87/4 with considering the making of the products, integration of STEAM, and the outcome products.

Keywords: *STEAM approach, project-based learning, students' critical thinking*