

## ABSTRACT

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### **PROJECT-BASED LEARNING MODEL BASED ON CHEMO-ENTREPRENEURSHIP APPROACH INCREASES STUDENTS' ENTREPRENEURIAL ATTITUDES, CRITICAL THINKING SKILLS, AND MASTERY OF CHEMISTRY CONCEPTS IN XYZ SCHOOL IN BOGOR**

(xix + 185 pages; 15 figures; 37 tables; 19 graphs; 2 diagrams; 33 appendixes)

Entrepreneurial attitudes, critical thinking skills and mastery of concepts are important during student's learning process in the classroom especially equipping them to perform well in Industry 4.0 era. The objectives of this research were to identify the differences of students' entrepreneurial attitudes, critical thinking skills and mastery of chemistry concepts from the class using project-based learning model as experimental class and direct instruction method as control class. This research was conducted to grade 9 students in XYZ school in Bogor on February–May 2020. The number of participants in this research are 15 students for experimental and control class. The research is quantitative research using weak experiment method and static-group pretest and post-test design. The research data were collected through rubrics and test. The data analysis used descriptive statistics such as average and n-gain score and inferential statistic such as Mann-Whitney test. The result of this research is students' entrepreneurial attitudes, critical thinking skills and mastery of chemistry concepts from experimental and control class are different. It can be seen through the *asymptotic sig (2-tailed)* of entrepreneurial attitudes = 0,000, critical thinking skills = 0,000, and the post-test and n-gain scores from mastery of chemistry concepts = 0,015 and 0.011 which are below than 0,05. To sum up, there are differences of students' entrepreneurial attitudes, critical thinking skills and mastery of concepts from the experimental and control class.

*Keywords:* project-based learning model, *chemo-entrepreneurship* approach, direct instruction method, entrepreneurial attitudes, critical thinking skills and mastery of concepts

References: 70 (1956 – 2019)

## ABSTRAK

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### **MODEL *PROJECT-BASED LEARNING* BERBASIS *CHEMO-ENTREPRENEURSHIP* UNTUK MENINGKATKAN SIKAP WIRAUSAHA, KETERAMPILAN BERPIKIR KRITIS, DAN PENGUASAAN KONSEP KIMIA PADA SISWA SEKOLAH XYZ DI BOGOR**

(xix + 185 halaman: 15 gambar; 37 tabel; 19 grafik; 2 diagram; 33 lampiran)

Sikap wirausaha, berpikir kritis dan penguasaan konsep merupakan hal-hal yang penting dalam proses pembelajaran di dalam kelas terutama dalam memperlengkapi siswa di era industri 4.0. Penelitian ini bertujuan untuk mengetahui adanya perbedaan sikap wirausaha, berpikir kritis, dan penguasaan konsep siswa yang menggunakan model *project-based learning* berbasis *chemo-entrepreneurship* dengan metode ceramah. Penelitian dilakukan pada siswa kelas 9 di Sekolah XYZ Bogor pada bulan Februari-Mei 2020, dengan subjek penelitian sebanyak 15 orang di masing-masing kelas baik eksperimen maupun kontrol. Penelitian ini merupakan penelitian kuantitatif menggunakan metode *weak experiment* dengan *static-group pretest and posttest design*. Data diperoleh dengan rubrik dan tes kemudian dicari nilai rata-rata dan *n-gain*. Untuk melihat perbedaan antara kelas eksperimen dan kontrol digunakan uji *Mann-Whitney*. Hasil dari penelitian ini adalah terdapat perbedaan sikap wirausaha, keterampilan berpikir kritis dan penguasaan konsep kimia siswa di kelas eksperimen dan kontrol. Uji sikap wirausaha diperoleh hasil *asympt. sig (2-tailed) = 0,000*, uji keterampilan berpikir kritis diperoleh hasil *asympt. sig (2-tailed) = 0,000*, dan uji nilai *posttest* penguasaan konsep diperoleh hasil *asympt. sig (2-tailed) = 0,015* dan *asympt. sig (2-tailed) = 0,011* untuk nilai *n-gain*, dengan hasil kurang dari 0,05. Maka terdapat perbedaan sikap wirausaha, keterampilan berpikir kritis dan penguasaan konsep antara kelas eksperimen dengan kontrol.

*Kata kunci:* model *project-based learning*, pendekatan *chemo-entrepreneurship*, metode ceramah, sikap wirausaha, keterampilan berpikir kritis dan penguasaan konsep

Referensi: 70 (1956 – 2019)