

**PENGARUH MODEL PEMBELAJARAN BERBASIS TANTANGAN
BERDIFERENSIASI DAN MODEL PEMBELAJARAN BERBASIS
MASALAH TERHADAP PENGUASAAN KONSEP KIMIA DAN
KETERAMPILAN BERPIKIR KREATIF SISWA SMA**

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ABSTRAK

Penelitian ini bertujuan mendeskripsikan dan menjelaskan perbedaan penguasaan konsep kimia dan keterampilan berpikir kreatif siswa yang diajarkan menggunakan model pembelajaran berbasis tantangan berdiferensiasi dan model pembelajaran berbasis masalah, baik secara parsial dan simultan. Jenis dan rancangan penelitian berupa *quasi experiment* dan *nonequivalent pretest-posttest control group design*. Populasi penelitian adalah siswa kelas XI di SMA Negeri 1 Seririt, Bali. Sampel penelitian terdiri atas empat kelas, yaitu XI 1, XI 2, XI 3, dan XI 4 dengan setiap kelas terdiri dari 36 siswa. Kelompok eksperimen dan kontrol ditentukan menggunakan teknik *cluster random sampling*. Data dikumpulkan melalui metode tes dan non-tes. Tes diperoleh dari hasil penguasaan konsep kimia dan keterampilan berpikir kreatif, sedangkan kuesioner menilai pendapat siswa terhadap pembelajaran. Teknik analisis data menggunakan statistika deskriptif dan inferensial. Analisis inferensial mencakup uji prasyarat dan uji hipotesis menggunakan statistika *Multivariate Analysis of Covariance* (Mancova) dengan bantuan SPSS versi 25 dan taraf signifikansi 5%. Hasil penelitian menunjukkan bahwa terdapat perbedaan yang signifikan dalam penguasaan konsep kimia dan keterampilan berpikir kreatif siswa yang diajarkan dengan model pembelajaran berbasis tantangan berdiferensiasi dan model pembelajaran berbasis masalah, baik secara parsial dan simultan. Selain itu, terdapat perbedaan signifikan dalam pendapat siswa terhadap kedua model pembelajaran tersebut. Kelompok eksperimen menunjukkan hasil yang lebih tinggi dalam penguasaan konsep kimia, keterampilan berpikir kreatif, dan pendapat siswa dengan skor rata-rata masing-masing sebesar 83,85; 86,15; dan 82,25. Sementara itu, kelompok kontrol memperoleh skor rata-rata sebesar 70,62; 75,67; dan 74,75. Kontribusi penelitian ini dapat membantu guru dalam menerapkan model pembelajaran yang tepat dalam meningkatkan penguasaan konsep kimia dan keterampilan berpikir kreatif.

Kata Kunci: model berbasis tantangan, diferensiasi, penguasaan konsep kimia, keterampilan berpikir kreatif

**THE EFFECT OF DIFFERENTIATED CHALLENGE-BASED LEARNING
MODEL AND PROBLEM-BASED LEARNING MODEL ON MASTERY
OF CHEMISTRY CONCEPTS AND CREATIVE THINKING SKILLS OF
SENIOR HIGH SCHOOL STUDENTS**

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ABSTRACT

This study aims to describe and explain the differences in mastery of chemical concepts and creative thinking skills of students taught using a differentiated challenge-based learning model and problem-based learning model, both partially and simultaneously. This study design was quasi-experimental with a nonequivalent pretest-posttest control group design. The population of this study consisted of XI grade students at SMA Negeri 1 Seririt, Bali. The study sample consisted of four classes, namely XI 1, XI 2, XI 3, and XI 4, each class consisting of 36 students. The experimental and control groups were determined using a cluster random sampling technique. Data were collected through both test and non-test methods. Tests were obtained from the results of mastery of chemical concepts and creative thinking skills, while non-tests were in the form of questionnaires assessing students' opinions on learning process. Data analysis techniques used descriptive and inferential statistics. Inferential analysis includes prerequisite tests and hypothesis testing using Multivariate Analysis of Covariance (Mancova), assisted by SPSS version 25 at a 5% significance level. The results indicated significant differences in the mastery of chemical concepts and creative thinking skills of students taught with differentiated challenge-based learning models and problem-based learning models, both partially and simultaneously. In addition, there were significant differences in students' opinions on the two learning models. The experimental group showed higher results in mastery of chemical concepts, creative thinking skills, and student opinions with average scores of 83.85; 86.15; and 82.25, respectively. Meanwhile, the control group obtain average scores of 70.62; 75.67; and 74.75. The findings of this study contribute to helping teachers impement appropriate learning models to improve students mastery of chemical concepts and creative thinking skills.

Keywords: *challenge-based model, differentiation, mastery of chemistry concepts, creative thinking skills*