

**KEMAMPUAN *TECHNOLOGICAL PEDAGOGICAL CONTENT*
KNOWLEDGE (TPACK) DAN PENGUASAAN KONSEP MAHASISWA
MELALUI PERKULIAHAN KIMIA ORGANIK POLIFUNGSI
MENGUNAKAN MODEL PEMBELAJARAN RADEC**

TESIS

Diajukan untuk Memenuhi Sebagian Syarat untuk Memperoleh Gelar Magister
Pendidikan Ilmu Pengetahuan Alam



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UNIVERSITAS PENDIDIKAN INDONESIA**

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Sebuah laporan penelitian tesis yang diajukan untuk memenuhi sebagian syarat
memperoleh gelar Magister Pendidikan pada Program Studi
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ABSTRAK

Penelitian ini bertujuan menganalisis (1) kemampuan *Technological Pedagogical Content Knowledge* (TPACK) dan (2) penguasaan konsep mahasiswa pada perkuliahan Kimia Organik Polifungsi menggunakan Model Pembelajaran *Read, Answer, Discuss, Explain, Create* (RADEC). Penelitian menggunakan metode eksperimen dengan desain praeksperimen. Subyek penelitian terdiri atas 39 mahasiswa semester 3 tahun akademik 2022/2023 pada salah satu perguruan tinggi negeri di Bandung. Pengumpulan data kemampuan TPACK menggunakan tes, survey, dan analisis produk. Pengumpulan data penguasaan konsep dilakukan menggunakan tes dan LKM. Data yang terkumpul dianalisis menggunakan n-gain dan uji beda skor *pre-test* dan *post-test* menggunakan Uji Wilcoxon. Ditemukan, terdapat peningkatan rata-rata skor kemampuan TPACK dengan n-gain 0,64 (sedang) dan penguasaan konsep dengan n-gain 0,70 (sedang). Hasil Uji Wilcoxon menunjukkan terdapat perbedaan yang signifikan antara rata-rata skor *post-test* dan rata-rata skor *pre-test* kemampuan TPACK dan penguasaan konsep dengan skor *post-test* lebih tinggi daripada skor *pre-test*.

Kata Kunci: Kimia Organik Polifungsi, Model Pembelajaran RADEC, Penguasaan Konsep, TPACK

ABSTRACT

This study aims to analyze (1) the Technological Pedagogical Content Knowledge (TPACK) competence and (2) the concept mastery through Polyfunctional Organic Chemistry Course using the Read, Answer, Discuss, Explain, Create (RADEC) Learning Model. This study is an experimental study with the pre-experimental type. The subject consisted of 39 students from Chemistry Education Department which study in the 3rd semester of the 2022/2023 academic year at a university in Bandung. Data collection on TPACK competence uses test, survey, and product analysis. Data collection on concept mastery uses test and student worksheet. The data were analyzed using n-gain and different tests using the Wilcoxon test. It was found that there was an increase in the TPACK competence score with n-gain 0.64 (moderate) and the concept mastery with n-gain 0.70 (moderate). The results of the Wilcoxon test showed that there was a significant difference between the average of post-test score and the average of pre-test score for the TPACK competence and the concept mastery with the post-test score being higher than the pre-test score.

Keywords: Concept Mastery, Polyfunctional Organic Chemistry, RADEC Learning Model, TPACK

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