

PENGEMBANGAN TES DIAGNOSTIK MODEL MENTAL TIPE *PREDICT –
OBSERVE – EXPLAIN* (TDM-POE) PADA MATERI HUKUM LAJU REAKSI
SKRIPSI

Diajukan untuk Memenuhi Salah Satu Syarat Memperoleh Gelar

Sarjana Pendidikan Program Studi Pendidikan Kimia



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ABSTRAK

Penelitian ini bertujuan untuk mengembangkan instrumen Tes Diagnostik Model mental tipe *Predict–Observe–Explain* (TDM-POE) pada materi hukum laju reaksi. Metode yang digunakan adalah *Research and Development* (R & D) yang dibatasi sampai tahap pengembangan produk awal. Instrumen yang digunakan berupa tabel kesesuaian indikator soal dengan kompetensi dasar, tabel kesesuaian soal dengan indikator soal dan kesesuaian jawaban dengan soal. Pengembangan soal-soal dilakukan berdasarkan pada indikator soal yang telah dilakukan analisis dan divalidasi oleh validator, sedangkan pengembangan jawaban yang benar dilakukan mengacu pada kajian beberapa buku teks *General Chemistry*. Rancangan awal TDM-POE-hukum laju reaksi terdiri dari 16 butir pertanyaan yang meliputi 7 butir soal tahap prediksi, 1 butir soal pada tahap observasi, dan 8 butir soal pada tahap eksplanasi. Hasil pengembangan instrumen tes diagnostik model mental tipe POE dinyatakan valid dengan beberapa perbaikan berdasarkan saran yang diberikan oleh tiga panelis yang terdiri dari dua orang doktor bidang Pendidikan Kimia, dan satu orang doktor bidang Kimia Fisika. Rancangan akhir TDM-POE-hukum laju reaksi terdiri dari 23 butir pertanyaan yang meliputi 7 butir soal tahap prediksi, 3 butir soal pada tahap observasi, dan 13 butir soal pada tahap eksplanasi.

Kata kunci : hukum laju reaksi, profil model mental, instrumen tes diagnostik model mental tipe POE

ABSTRACT

This study aims to develop a Predict – Observe – Explain (TDM-POE) Mental Model Diagnostic Test instrument on the rate law. The method used is Research and Development (R & D) which is limited to the initial product development stage. The instruments used were in the form of a table of the suitability of the question indicators with basic competencies, a table of the suitability of the questions to the indicators of the questions and the suitability of the answers to the questions. The development of questions is carried out based on the question indicators that have been analyzed and validated by the validator, while the development of correct answers is carried out by referring to studies of several General Chemistry textbooks. The initial design of TDM-POE-the law of reaction rate consisted of 16 questions covering 7 items at the prediction stage, 1 item at the observation stage, and 8 items at the explanation stage. The results of the development of the POE type mental model diagnostic test instrument were declared valid with several improvements based on the suggestions given by three panelists consisting of two doctorates in Chemistry Education, and a doctorate in Physical Chemistry. The final design of TDM-POE-the law of reaction rate consists of 23 questions which include 7 items in the prediction stage, 3 items at the observation stage, and 13 items at the explanation stage.

Key words: reaction rate law, reaction order, rate constant, mental model profiles, POE Mental Model Diagnostic Test Instrument

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