

**PENERAPAN STRATEGI *PREDICT DISCUSS EXPLAIN OBSERVE*
DISCUSS EXPLAIN (PDEODE) BERBANTUAN SIMULASI KOMPUTER
UNTUK MENGURANGI KUANTITAS MISKONSEPSI DAN
MENINGKATKAN KEMAMPUAN MEMAHAMI KONSEP PESERTA
DIDIK PADA MATERI MOMENTUM DAN IMPULS**

TESIS

Diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar
Magister Pendidikan Fisika



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Sebuah Tesis yang diajukan untuk memenuhi salah satu syarat memperoleh gelar
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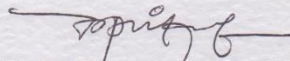
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ABSTRAK

Penelitian ini bertujuan untuk mengidentifikasi efektifitas penerapan strategi *Predict Discuss Explain Observe Discuss Explain (PDEODE)* berbantuan simulasi komputer untuk mengurangi kuantitas miskonsepsi dan meningkatkan kemampuan memahami konsep peserta didik. Metode penelitian yang digunakan dalam penelitian ini adalah *mixed-method* dengan desain *sequential explanatory*. Subjek penelitian ini terdiri dari 22 peserta didik (12 perempuan dan 10 laki-laki) kelas X di salah satu SMAN yang berlokasi di Indramayu. Instrumen yang digunakan dalam penelitian ini adalah *four-tier test* yang dikembangkan dengan model 3D+1I. Penurunan kuantitas miskonsepsi peserta didik diketahui dengan menghitung nilai PKM, sedangkan peningkatan kemampuan memahami konsep peserta didik dihitung menggunakan N-Gain dan juga dihitung efektifitasnya menggunakan *effect size*. Hasil penelitian menunjukkan bahwa penerapan PDEODE berbantuan simulasi komputer mampu menurunkan kuantitas miskonsepsi peserta didik pada materi momentum dan impuls dengan persentase nilai PKM sebesar 81%. Kemudian tingkat kemampuan memahami konsep peserta didik meningkat dengan nilai N-Gain sebesar 0,73 dan nilai *effect size* sebesar 4.95.

Kata Kunci : PDEODE, simulasi komputer, miskonsepsi, kemampuan memahami. momentum dan impuls

**IMPLEMENTATION OF PREDICT DISCUSS EXPLAIN OBSERVE
DISPLUSS EXPLAIN (PDEODE) ASSISTED BY COMPUTER
SIMULATION TO REDUCE STUDENTS MISCONCEPTION AND
IMPROVE CONCEPTUAL UNDERSTANDING ON MOMENTUM AND
IMPULSE CONCEPT**

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ABSTRACT

This study aims to identify the effectiveness of implementation Predict Discuss Explain Observe Discuss Explain (PDEODE) assisted by computer simulations to reduce students' misconceptions and improve students' conceptual understanding. The research method used in this study is a mixed-method with a sequential explanatory design. The subjects in this study consisted of 22 students (12 females and 10 boys) class X at one of the high schools located in Indramayu. The instrument used in this study was a four-tier test developed with the 3D + 1I model. To reduce students' misconceptions is known by calculating the PKM equation, while to know an increase students conceptual understanding is calculated using N-Gain and its effectiveness is also calculated by effect size. The results showed that the application of PDEODE assisted by computer simulations was able to reduce the number of students' misconceptions on the material of momentum and impulse with a percentage of PKM value of 81%. Then, the level of students' conceptual understanding increases with N-Gain 0.73 and score of effect size is 4.95.

Keywords: PDEODE, computer simulations, misconceptions, conceptual understanding, momentum and impulse

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