

**PENERAPAN MODEL *INTERACTIVE LECTURE DEMONSTRATIONS*
(ILD) BERBANTUAN SIMULASI KOMPUTER UNTUK MENURUNKAN
KUANTITAS MISKONSEPSI PESERTA DIDIK DAN PENGUBAHAN
KONSEPSI PADA MATERI GELOMBANG CAHAYA**

TESIS

**Diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar
Magister Pendidikan Program Studi Pendidikan Fisika**



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**Sebuah tesis yang diajukan untuk memenuhi salah satu syarat
memperoleh gelar Magister Pendidikan (M.Pd) pada program Studi
Pendidikan Fisika**

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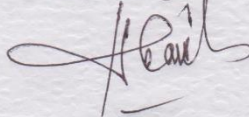
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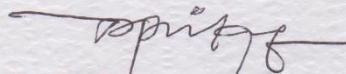
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ABSTRAK

Miskonsepsi adalah salah satu permasalahan yang masih ditemukan pada materi gelombang cahaya. Permasalahan tersebut dapat menjadi hambatan dalam proses pembelajaran, terlebih materi yang bersangkutan bersifat abstrak. Tujuan dari penelitian ini adalah untuk menurunkan kuantitas miskonsepsi peserta didik dan perubahan konsepsi pada materi gelombang cahaya. Metode yang digunakan adalah metode campuran dengan desain *explanatory sequential mixed methods*. Instrumen yang digunakan adalah instrumen *four-tier* yang dikembangkan berdasarkan alternatif konsepsi peserta didik pada materi gelombang cahaya. Partisipan dalam penelitian ini berjumlah 46 peserta didik (rata-rata berusia 17 tahun) di salah satu SMA Kota Indramayu. Partisipan terdiri dari 22 peserta didik di kelas eksperimen, dan 24 peserta didik di kelas kontrol. Peserta didik di kelas eksperimen menggunakan model *Interactive Lecture Demonstrations (ILD)* berbantuan simulasi komputer. Sedangkan kelas kontrol tanpa bantuan simulasi komputer. Hasilnya, penurunan kuantitas miskonsepsi pada kelas eksperimen lebih tinggi dibandingkan dengan kelas kontrol. Secara berurutan, nilai yang didapat adalah 0,83 dengan kategori tinggi, dan 0,42 pada kategori sedang. Begitupun untuk perubahan konsepsi, pada kategori *Acceptable Change*, kelas eksperimen lebih tinggi dibandingkan kelas kontrol, dengan persentase secara berurutan 69% dan 48%. Namun, kategori lainnya seperti *No Change* dan *Not Acceptable* didominasi oleh kelas kontrol, dengan persentase sebesar 34% dan 18%. Sedangkan kelas eksperimen secara berurutan 25% dan 6%. Hasil perhitungan *effect size* juga menunjukkan bahwa penerapan model ILD berbantuan simulasi komputer memiliki dampak dengan nilai 0,71 pada kategori besar. Sehingga, model ILD berbantuan simulasi komputer dapat dijadikan sebagai salah satu alternatif untuk menurunkan kuantitas peserta didik yang mengalami miskonsepsi pada materi abstrak, seperti gelombang cahaya.

Kata kunci: Model *Interactive Lecture Demonstrations (ILD)*, simulasi komputer, miskonsepsi, perubahan konsepsi, gelombang cahaya.

**IMPLEMENTATION OF INTERACTIVE LECTURE
DEMONSTRATIONS (ILD) MODEL WITH COMPUTER SIMULATION
TO DECREASE THE QUANTITY OF STUDENTS MISCONCEPTION
AND CONCEPTUAL CHANGE ON LIGHT WAVES MATERIAL**

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ABSTRACT

Misconception is one of the problems that is still found in the material of light waves. These problems can be obstacles in the learning process, especially in the abstract material. The study aims to decrease the quantity of students' misconceptions and conceptual change on light wave material. The method used is a mixed-method with an explanatory sequential mixed methods design. The instrument used was a four-tier instrument developed based on alternative conceptions of students on light wave. Participants in this study numbered 46 students (average age 17 years old) in one of Indramayu City high schools. Participants consisted of 22 students in the experimental class, and 24 students in the control class. Students in the experimental class use the Interactive Lecture Demonstrations (ILD) model with computer simulations. While the control class without the computer simulations. The result, a decreased quantity of students' misconception in the experimental class was higher than the control class. In sequence, the value obtained was 0,83 with a high category and 0,42 in the moderate category. Likewise for the conceptual change, in the Acceptable Change category, the experimental class was higher than the control class, with percentages of 69% and 48%, respectively. The other categories, such as No Change and Not Acceptable were dominated by the control class, with percentages of 34% and 18%. While the experimental classes were 25% and 6%, respectively. The effect size calculation results show that the implementation of the ILD model with computer simulations has an impact of 0,71 in the large category. Thus, ILD models with computer simulations can be used as an alternative to decrease the quantity of students' misconceptions and conceptual change on light wave material.

Keywords: Interactive Lecture Demonstrations (ILD) Model, computer simulation, misconception, conceptual change, light wave.

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