# PEMBELAJARAN INOVATIF *JIGSAW* BERORIENTASI ERGONOMI PADA PEMBELAJARAN BIOLOGI MENGAKIBATKAN PERBEDAAN KEBOSANAN DAN KELELAHAN SERTA KONTRIBUSINYA TERHADAP HASIL BELAJAR KOGNITIF SISWA DI SMA NEGERI 1 MUNCAR

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## ABSTRAK

Tujuan dari penelitian ini adalah untuk mengetahui bahwa pembelajaran inovatif jigsaw berorientasi ergonomi pada pembelajaran biologi mengakibatkan: (1) perbedaan kelelahan siswa, (2) perbedaan kebosanan siswa, dan (3) penurunan kelelahan dan kebosanan pada siswa yang berkontribusi terhadap hasil belajar kognitifnya. Jenis penelitian yang dilakukan adalah *quasi eksperimental* dengan rancangan *nonequivalent randomized pre and posttest control group design*, dengan melibatkan 2 kelas yaitu satu kelas eksperimen dengan 34 siswa dan satu kelas kontrol dengan 32 siswa. Lokasi penelitain ini di SMA Negeri 1 Muncar, Kabupaten Banyuwangi. Dilakukan pendataan terhadap: (1) kelelahan siswa yang didata dengan kuesioner 30 *items of rating scales general fatigue*, (2) kebosanan siswa dalam proses pembelajaran yang didata dengan kuesioner kebosanan, dan (3) hasil belajar kognitif siswa yang didata dengan soal tes pilihan ganda sebanyak 20 butir soal. Data yang diperoleh dianalisis dengan uji *t independent sample*, karena datanya berdistribusi normal pada taraf signifikasi 5%. Hasil penelitian menunjukkan bahwa pembelajaran inovatif *jigsaw* berorientasi ergonomi dapat mengakibatkan perbedaan kelelahan dan kebosanan secara signifikan ($p<0,05$) dan terjadi penurunan kelelahan siswa sebesar 14,52% dan kebosanan siswa sebesar 33,68% antara kelompok eksperimen dan kelompok kontrol. Berdasarkan uji regresi untuk mengetahui kontribusi kelelahan dan kebosanan siswa terhadap hasil belajar kognitifnya, didapatkan hasil kontribusi kelelahan sebesar 3,7% dan kontribusi kebosanan sebesar 1,0% ($p>0,05$) terhadap hasil belajar kognitif siswa yang dibelajarkan melalui pembelajaran inovatif *jigsaw* pada pembelajaran biologi. Dengan demikian dapat disimpulkan bahwa pembelajaran inovatif *jigsaw* berorientasi ergonomi pada pembelajaran biologi dapat mengakibatkan perbedaan kelelahan dan kebosanan siswa, akan tetapi tidak berkontribusi terhadap hasil belajar kognitif siswa.

Kata kunci: pembelajaran inovatif *jigsaw*, kelelahan, kebosanan, hasil belajar kognitif

# *INNOVATIVE ERGONOMIC ORIENTED JIGSAW LEARNING IN BIOLOGY LEARNING CAUSES THE DIFFERENCES OF BODRESS AND FATIGUE AND THEIR CONTRIBUTION TO STUDENTS' COGNITIVE LEARNING OUTCOMES IN SMA NEGERI 1 MUNCAR*

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## *ABSTRACT*

*The purpose of this study was to find out that ergonomics-oriented jigsaw learning in biological learning resulted in: (1) differences in student fatigue, (2) differences in student boredom, and (3) decreased fatigue and boredom in students which contributed to their cognitive learning outcomes. This type of research is a quasi-experimental design with a nonequivalent randomized pre and posttest control group design, involving 2 classes, namely an experimental class with 34 students and a control class with 32 students. The location of this research is SMA Negeri 1 Muncar, Banyuwangi Regency. Data were collected on: (1) student fatigue which was recorded with a 30 items of rating scales general fatigue questionnaire, (2) student boredom in the learning process which was recorded with a boredom questionnaire, and (3) student cognitive learning outcomes which were recorded with multiple choice test questions. as many as 20 questions. The data obtained were analyzed by independent sample t test, because the data were normally distributed at a significance level of 5%. The results showed that ergonomics-oriented jigsaw innovative learning can result in significant differences in fatigue and boredom ($p<0.05$) and a decrease in student fatigue by 14.52% and student boredom by 33.68% between the experimental group and the control group. Based on the regression test to determine the contribution of students' fatigue and boredom to their cognitive learning outcomes, the results obtained were 3.7% fatigue contribution and 1.0% boredom contribution ($p>0.05$) to students' cognitive learning outcomes who were taught through jigsaw innovative learning. in biology learning. Thus, it can be concluded that ergonomic oriented jigsaw learning in biology learning can lead to differences in student fatigue and boredom, but does not contribute to student cognitive learning outcomes.*

*Keywords: Jigsaw innovative learning, fatigue, boredom, cognitive learning outcomes*