PENERAPAN MODEL PEMBELAJARAN *REASONING AND PROBLEM SOLVING* UNTUK MENINGKATKAN KEMAMPUAN *SCIENTIFIC REASONING* DAN PEMECAHAN MASALAH FISIKA SISWA SMA PADA MATERI SUHU DAN KALOR

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ABSTRAK

Penelitian ini bertujuan untuk mendapatkan gambaran tentang peningkatan kemampuan *scientific reasoning* dan pemecahan masalah fisika siswa, yang mendapatkan pembelajaran *reasoning and problem solving,* dibandingkan dengan siswa yang mendapatkan pembelajaran konvensional pada materi suhu dan kalor. Metode penelitian yang digunakan adalah *quasi-experiment* dengan desain *non eqivalent pretest-postest control group.* Instrumen yang digunakan untuk menjaring kemampuan *scientific reasoning* adalah tes tertulis jenis pilihan ganda beralasan, sedangkan untuk kemampuan pemecahan masalah digunakan tes tertulis berbentuk essay. Hasil penelitian menunjukkan adanya peningkatan kemampuan *scientific reasoning* pada kedua kelas, peningkatan pada kelas yang menerapkan pembelajaran *reasoning and problem solving* (0,71) lebih tinggi secara signifikan dibandingkan kelas yang menerapkan pembelajaran konvensional (0,45). Peningkatan yang sama juga terjadi pada kemampuan pemecahan masalah, diketahui pada kelas yang menerapkan pembelajaran *reasoning and problem solving* (0,75) lebih tinggi secara signifikan dibandingkan kelas yang menerapkan pembelajaran konvensional (0,63). Secara umum hampir seluruh siswa (74,3%) memberikan tanggapan positif (setuju) terhadap penerapan model pembelajaran *reasoning and problem solving.* Dapat disimpulkan bahwa model pembelajaran *reasoning and problem solving* secara signifikan dapat lebih meningkatkan kemampuan *scientific reasoning* dan pemecahan masalah fisika siswa pada materi suhu dan kalor.

Kata kunci: model pembelajaran *reasoning and problem solving*, kemampuan *scientific reasoning*, kemampuan pemecahan masalah

THE APPLICATION OF REASONING AND PROBLEM SOLVING LEARNING MODEL TO IMPROVED SCIENTIFIC REASONING AND PROBLEM SOLVING PHYSICS SENIOR HIGH SCHOOL STUDENTS IN MATERIAL TEMPERATURE AND HEAT

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ABSTRACT

This study aims to get an overview of the increase in the ability of scientific reasoning and problem solving physics students, who get reasoning and problem solving learning, compared with students who received conventional learning the material temperature and heat. The method used is a quasi-experimental with non eqivalent pretest-posttest control group design. The instrument used to collect scientific reasoning ability is a written multiple-choice tests reasoned, while for problem solving ability used in the form of an essay writing test. The results showed an increase in scientific reasoning ability in both classes, increase in classes that implement reasoning and problem solving learning (0.71) was significantly higher than the class that implements the conventional teaching (0.45). The same increase also occurred in problem-solving abilities, known in the class that implements the reasoning and problem solving learning (0.75) was significantly higher than the class that implements the conventional learning (0.63). In general, almost all students (74.3%) responded positively (agree) to the application of reasoning and problem solving learning models. It can be concluded that reasoning and problem solving learning model can significantly improve the ability of scientific reasoning and problem solving physics student at material temperatures and heat.

Keywords: reasoning and problem solving learning model, the ability of scientific reasoning, the ability of problem solving