

INTEGRASI PROSES *RESEARCHING REASONING REFLECTING* PADA MODEL *PROBLEM BASED LEARNING* UNTUK MENINGKATKAN KEMAMPUAN LITERASI SAINTIFIK DAN SIKAP SISWA TERHADAP FISIKA

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ABSTRAK

Perlu dibedakan antara istilah literasi sains dengan literasi saintifik. Tujuan penelitian ini adalah untuk mengetahui peningkatan kemampuan literasi saintifik yang dimiliki siswa dan sikap siswa terhadap fisika melalui penerapan model *Problem Based Learning (PBL)* dengan integrasi proses *Researching, Reasoning, dan Reflecting (3R)*. Penelitian dengan desain penelitian *The Matching-Only Pretest-Posttest Control Group Design* dilakukan di kelas X di salah satu SMA di Kota Bandung. Sampel yang digunakan sebanyak 65 orang siswa yang dipilih dengan cara acak kelas. Teknik pengambilan data dilakukan dengan cara memberikan tes tertulis sebanyak dua kali di awal dan di akhir pembelajaran. Tes kemampuan literasi saintifik berupa soal uraian sebanyak 12 soal yang dibuat berdasarkan indikator *PISA 2015*, sedangkan untuk sikap digunakan instrumen skala bertingkat dengan 6 indikator sikap terhadap fisika. Hasil penelitian menunjukkan bahwa secara signifikan pembelajaran *PBL* dengan integrasi proses *3R* lebih meningkatkan kemampuan literasi saintifik yang dimiliki siswa dibandingkan dengan pembelajaran *PBL* tanpa integrasi proses *3R*. Rata-rata *N-gain* kelas eksperimen sebesar 0,50 sedangkan rata-rata *N-gain* kelas kontrol sebesar 0,34. Pengaruh proses *3R* terhadap kemampuan literasi saintifik dihitung dengan rumus ukuran dampak menurut Cohen (d_c) dan menunjukkan angka d_c sebesar 1,07 (pengaruh besar). Hasil instrumen sikap siswa terhadap fisika untuk kelas eksperimen menunjukkan bahwa 42% memiliki sikap yang positif dan 15% memiliki sikap yang negatif terhadap fisika.

Kata kunci: Literasi saintifik, Sikap siswa terhadap fisika, *Problem Based Learning (PBL)*, Proses *Researching-Reasoning-Reflecting (3R)*.

ABSTRACT

The distinction between these terms with the scientific literacy of scientific literacy. The purpose of this study was to determine the increase to the scientific literacy of the students and the students' attitudes towards physics through the application of the model Problem Based Learning (PBL) with the integration process Researching, Reasoning, and Reflecting (3R). The study research design Matching-Only pretest-posttest control group design done in class X in one high school in Bandung. Samples used as many as 65 students were selected in a random way the class. Techniques of data retrieval is done by giving a written test twice at the beginning and at the end of the lesson. Scientific literacy test be as many as 12 questions about the description is made based on indicators PISA 2015, while for the attitude of used instruments graduated scale with six indicators of attitudes toward physics. The results showed that significantly PBL learning with the integration process of 3R further improve the scientific literacy of the students compared with PBL without integration process learning the 3Rs. The average N-gain experimental class of 0.50 while the average N-gain control class is 0.34. The influence of the 3R toward scientific literacy is calculated by the formula Cohen'd and shows the number d of 1.07 (high category). The results of students' attitudes towards physics instruments for experimental class, the average percentage agreed was 42.38% while 40.69% for grade control. This shows that almost half of the students agree with statements relating to attitudes towards physics.

Keywords: Scientific Literacy, Attitude Toward Physics, Problem Based Learning, 3R Process