

ABSTRAK

Putri Handayani: Pengembangan Media Pembelajaran Interaktif Berbantuan *Mentimeter* untuk Meningkatkan Keterampilan Berpikir Kritis Peserta Didik Pada Materi Gelombang Bunyi.

Keterampilan berpikir kritis merupakan salah satu kompetensi penting dalam pembelajaran abad ke-21, khususnya pada pembelajaran fisika yang menuntut peserta didik mampu menganalisis fenomena dan memecahkan permasalahan secara sistematis. Studi pendahuluan menunjukkan keterampilan berpikir kritis peserta didik pada materi gelombang bunyi masih rendah dengan rata-rata 31 dan pemanfaatan media interaktif belum optimal. Penelitian ini bertujuan mengembangkan media pembelajaran interaktif berbantuan *Mentimeter* menggunakan model *Problem Based Learning* (PBL) serta mengetahui kelayakan media, keterlaksanaan penggunaan media pada setiap sintaks PBL, dan peningkatan keterampilan berpikir kritis. Penelitian menggunakan metode *Research and Development* (R&D) dengan model ADDIE. Subjek implementasi terdiri atas 29 peserta didik kelas XI. Data dikumpulkan melalui observasi, wawancara, angket kebutuhan, validasi, observasi keterlaksanaan, serta *pretest* dan *posttest*. Hasil penelitian menunjukkan koefisien *Gregory* validasi media sebesar 0,84 dan materi 1,00 dengan kategori sangat tinggi. Keterlaksanaan penggunaan media pada lima sintaks PBL memperoleh rata-rata 79,58% dengan kategori baik, sedangkan keterlaksanaan pembelajaran secara keseluruhan memperoleh rata-rata 85,75% dengan kategori baik. Nilai rata-rata *pretest* sebesar 35,70 meningkat menjadi 81,39 pada *posttest* dengan *N-Gain* 0,711 kategori tinggi. Uji *paired-samples t-test* memperoleh $t(28)=23,828$ dan $p<0,001$. Dengan demikian, media yang dikembangkan layak digunakan, dapat diterapkan dengan baik dalam mendukung aktivitas pada setiap sintaks PBL, dan penggunaannya diikuti peningkatan keterampilan berpikir kritis peserta didik.

Kata Kunci: Berpikir Kritis, Gelombang Bunyi, Media Pembelajaran Interaktif, *Mentimeter*, *Problem Based Learning*.

ABSTRACT

Putri Handayani: *Development of Mentimeter-Assisted Interactive Learning Media to Improve Students' Critical Thinking Skills on Sound Waves.*

Critical thinking skills are essential competencies in 21st-century learning, particularly in physics education, which requires students to analyze phenomena and solve problems systematically. A preliminary study indicated that students' critical thinking skills on sound wave topics were still low, with an average score of 31, while the use of interactive learning media had not been optimized. This study aimed to develop Mentimeter-assisted interactive learning media using the Problem-Based Learning (PBL) model and to determine the feasibility of the media, the implementation of media use in each PBL syntax, and the improvement in students' critical thinking skills. This study employed the Research and Development (R&D) method using the ADDIE model. The implementation involved 29 eleventh-grade students. Data were collected through observations, interviews, needs assessment questionnaires, validation, learning implementation observations, as well as pretests and posttests. The results showed that the Gregory coefficients for media and content validation were 0.84 and 1.00, respectively, both indicating a very high level of validity. The implementation of media use across the five PBL syntaxes achieved an average of 79.58%, categorized as good, while the overall learning implementation achieved an average of 85.75%, also categorized as good. The mean pretest score increased from 35.70 to 81.39 on the posttest, with an N-Gain score of 0.711, categorized as high. The paired-samples t-test yielded $t(28) = 23.828$ and $p < 0.001$. Therefore, the developed media is feasible for use, can be implemented effectively to support activities in each PBL syntax, and its implementation was associated with an improvement in students' critical thinking skills.

Keywords: *Critical Thinking, Sound Waves, Interactive Learning Media, Mentimeter, Problem-Based Learning.*