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**Pengaruh Media dan Metode Pelatihan terhadap Efektivitas Pelatihan Pengoperasian Teknologi Energi
Terbarukan Berbasis Komunitas**
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

INTISARI

Pelatihan teknologi energi terbarukan berbasis komunitas memerlukan strategi pembelajaran yang efektif agar peserta mampu memahami materi serta mengoperasikan teknologi secara tepat. Namun, penelitian terdahulu umumnya meneliti media dan metode pelatihan secara terpisah serta belum banyak mengkaji pengaruh kombinasi keduanya terhadap respons afektif dan beban kognitif peserta. Oleh karena itu, penelitian ini dilakukan untuk menganalisis pengaruh kombinasi media dan metode pelatihan terhadap *knowledge gain, performance outcome, affective response,* dan *cognitive load*.

Enam puluh enam orang (46 perempuan, 20 laki-laki) dengan rentang umur 16–64 tahun (*M*= 42.85 tahun, *SD*= 11.90 tahun) mengikuti eksperimen dengan *mixed factorial design.* Partisipan dibagi ke dalam enam kelompok perlakuan berdasarkan kombinasi media pelatihan (audiovisual *community-leader*, audiovisual profesional, dan poster), serta metode pelatihan (*hands-on* dan demonstrasi). Pengumpulan data dilakukan melalui *pre-test, post-test*, penilaian performa praktik, serta pengisian kuesioner *Self-Assessment Manikin* (SAM) dan NASA-TLX.

Hasil penelitian menunjukkan bahwa media berpengaruh signifikan terhadap *cognitive load* (P = 0.032), dengan media audiovisual *community-leader* menghasilkan beban kognitif lebih tinggi dibandingkan audiovisual profesional dan poster. Metode pelatihan tidak menunjukkan pengaruh yang signifikan secara statistik pada seluruh variabel dependen, meskipun secara deskriptif metode *hands-on* konsisten menghasilkan rata-rata *performance outcome* yang lebih tinggi dibandingkan demonstrasi pada ketiga media. Selain itu, ditemukan interaksi signifikan antara media dan metode pada dimensi *SAM pleasure* (P = 0.035). Hasil tersebut menunjukkan bahwa pemilihan kombinasi media dan metode pelatihan perlu dipertimbangkan dalam perancangan pelatihan energi terbarukan berbasis komunitas.

Kata kunci: Pelatihan Energi Terbarukan, Pelatihan Berbasis Komunitas, Media Pelatihan, Metode Pelatihan, Hasil Belajar

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ABSTRACT

Community-based renewable energy technology training requires effective learning strategies to ensure participants can understand the material and properly operate the technology. However, previous studies have generally examined training media and methods separately and have rarely investigated the influence of their combination on participants' affective responses and cognitive load. Therefore, this study analyzed the effects of training media and methods on participants' knowledge gain, performance outcome, affective response, and cognitive load.

A total of 66 participants (46 females and 20 males) aged 16–64 years (M = 42.85, SD = 11.90) participated in a mixed factorial design. Participants were divided into six treatment groups based on combinations of training media (participatory audiovisual, professional audiovisual, and poster media), and training methods (hands-on and demonstration). Data were collected through pre-test, post-test, performance assessment, and questionnaires using the Self-Assessment Manikin (SAM) and NASA-TLX.

The results showed that training media significantly influenced cognitive load ($P = 0.032$), with participatory audiovisual media producing higher cognitive load than professional audiovisual and poster media. Training methods did not show a statistically significant effect on any dependent variable, however the hands-on method consistently produced higher mean performance outcomes than demonstration across all three media types descriptively. In addition, a significant interaction between media and methods was found in the SAM pleasure dimension ($P = 0.035$). These findings highlight the importance of considering training media and method combinations in designing community-based renewable energy training programs.

Keywords: Renewable Energy Training, Community-Based Training, Training Media, Training Methods, Learning Outcomes