

## ABSTRAK

### **PENGEMBANGAN MEDIA TRAINER KIT BERBASIS *INTERNET OF THINGS* (IoT) PADA PEMBELAJARAN PRAKTIK JARAK JAUH UNTUK MENINGKATKAN HASIL BELAJAR MATERI RANGKAIAN DECODER KELAS XI TEKNIK AUDIO VIDEO SMK NEGERI 2 BANDAR LAMPUNG**

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Penelitian ini bertujuan mendeskripsikan proses pengembangan media trainer kit berbasis IoT yang valid dan mendeskripsikan hasil pengembangan media yang praktis serta efektif sebagai sarana pembelajaran praktik jarak jauh materi rangkaian decoder kelas XI TAV SMK Negeri 2 Bandar Lampung. Penelitian ini menggunakan pendekatan *Research and Development* (R&D) dengan model 4D yang terdiri dari empat tahap utama yaitu *Define, Design, Develop, dan Disseminate*. Teknik pengumpulan data dalam penelitian ini adalah wawancara, observasi, angket, dokumentasi dan tes hasil belajar. Hasil penelitian menunjukkan uji validitas oleh ahli media 1 didapatkan skor 93,75 % kategori sangat layak, ahli media 2 sebesar 91,67 % kategori sangat layak dan ahli media 3 sebesar 89,58 % kategori sangat layak. Adapun ahli materi 1 sebesar 95,00 % kategori sangat layak, ahli materi 2 sebesar 95,00 % sangat layak dan ahli materi 3 sebesar 90,00% sangat layak. Uji kepraktisan menunjukkan 76,92 % pengguna merespon sangat praktis pada uji skala terbatas dan 83,87 % memberikan respon sangat praktis pada uji skala luas. Sedangkan guru yang melakukan ujicoba juga memberikan respon sangat praktis. Adapun efektifitas di uji menggunakan uji *N gain score* pada kelas eksperimen sebesar 68 % dalam kategori cukup efektif dan kelas kontrol 20,3 % dalam kategori tidak efektif. Selain itu dilakukan uji *t independen* untuk *N gain score* didapatkan perbedaan secara signifikan efektifitas pembelajaran yang dilaksanakan menggunakan media trainer kit berbasis IoT dengan pembelajaran yang tidak menggunakan media tersebut.

**Kata Kunci:** Trainer kit berbasis IoT, Pembelajaran Praktik Jarak Jauh, Hasil Belajar Siswa

## ABSTRACT

### **DEVELOPMENT OF INTERNET OF THINGS (IoT) BASED TRAINER KIT MEDIA IN DISTANCE PRACTICE LEARNING TO IMPROVE LEARNING OUTCOMES OF DECODER CIRCUIT MATERIAL IN CLASS XI AUDIO VIDEO ENGINEERING SMK NEGERI 2 BANDAR LAMPUNG**

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This study aims to describe the process of developing a valid IoT-based trainer kit and to describe the results of developing practical and effective media as a means of distance learning for decoder circuit material for class XI TAV at SMK Negeri 2 Bandar Lampung. This study uses a Research and Development (R&D) approach with a 4D model consisting of four main stages, namely Define, Design, Develop, and Disseminate. The data collection techniques in this study were interviews, observation, questionnaires, documentation, and learning outcome tests. The results of the study showed that the validity test by media expert 1 obtained a score of 93.75% in the very feasible category, media expert 2 obtained 91.67% in the very feasible category, and media expert 3 obtained 89.58% in the very feasible category. Meanwhile, material expert 1 scored 95.00% in the very feasible category, material expert 2 scored 95.00% in the very feasible category, and material expert 3 scored 90.00% in the very feasible category. The practicality test showed that 76.92% of users responded that it was very practical in the limited scale test and 83.87% responded that it was very practical in the large scale test. Meanwhile, the teachers who conducted the trial also responded that it was very practical. The effectiveness was tested using the N gain score test in the experimental class, which was 68% in the fairly effective category, and the control class was 20.3% in the ineffective category. In addition, an independent t-test was conducted for the N gain score, which showed a significant difference in the effectiveness of learning using IoT-based trainer kits compared to learning without using these media.

**Keywords:** IoT-based trainer kit, Remote Practical Learning, Student Learning Outcomes