# ABSTRAK

# PENGEMBANGAN E-MODUL BERBANTUAN *AUGMENTED REALITY* (AR) PADA MATERI VIRUS UNTUK KELAS X SMA

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Di tengah masa pandemi yang masih melanda, pendidikan terus mengalami penyesuaian dalam hal pembelajaran yang dilakukan yaitu dengan *blended learning*. Implementasi pembelajaran di beberapa SMA di Yogyakarta dan Jawa Tengah menunjukkan bahwa pembelajaran yang dilakukan masih terkendala karena kurangnya media pembelajaran yang lengkap dan menarik untuk melakukan pembelajaran mandiri. Berdasarkan hasil analisis kebutuhan, para guru berharap adanya pengembangan suatu inovasi produk pembelajaran yang mampu memfasilitasi siswa untuk belajar mandiri. Oleh sebab itu, peneliti berusaha untuk mengembangkan sebuah produk e-modul berbantuan *Augmented Reality* (AR) untuk materi virus kelas X SMA. E-modul tersebut mampu memvisualisasikan bentuk virus sehingga dapat menunjang ketercapaian tujuan pembelajaran. Tujuan dari penelitian ini adalah untuk mengembangkan dan mengetahui kelayakan E-Modul Berbantuan *Augmented Reality* pada materi Virus untuk kelas X SMA.

Penelitian yang dilakukan merupakan penelitian pengembangan dengan desain model ADDIE (*Analysis, Design, Development, Implementation, and Evaluation)* yang kemudian disesuaikan kembali sehingga hanya mencapai tahap ketiga yaitu *development*. Tahapan yang dilakukan berupa analisis kebutuhan di 6 SMA, dilanjutkan dengan desain produk, pengembangan produk dan kemudian dilanjutkan dengan uji kelayakan produk yang dihasilkan.

Hasil penelitian pengembangan produk menunjukkan bahwa e-modul berbantuan AR dikembangkan dengan komponen lengkap meliputi tujuan pembelajaran, indikator, materi, gambar berbantuan AR, kuis dan evaluasi. Hasil uji kelayakan memperoleh persentase perolehan skor validasi materi yaitu sebesar 90,8% dengan kriteria "Sangat Tinggi" dan skor validasi media memperoleh sebesar 94,2% dengan kriteria "Sangat Tinggi". Rata-rata akhir yang diperoleh adalah 92,5% yang masuk dalam kriteria validasi "Sangat Tinggi". Hal tersebut menunjukkan bahwa e-modul berbantuan *Augmented Reality* (AR) pada materi Virus untuk kelas X SMA layak diujicobakan sesuai saran.

**Kata kunci**: E-modul, *Augmented Reality,* Virus, *Research & Development*.

*ABSTRACT*

*DEVELOPMENT OF AUGMENTED REALITY (AR)-ASSISTED E-MODULES ON VIRUS MATERIALS FOR 10th GRADE STUDENTS*

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*During the pandemic that is still hitting, education continues to experience adjustments in terms of learning that is carried out, namely by blended learning. The implementation of learning in several high schools in Yogyakarta and Central Java showed that the learning carried out still constrained due to the lack of complete and attractive learning media for independent learning. Based on the results of the needs analysis, the teachers hope that there will be the development of an innovative learning product that can facilitate students to learn independently. Therefore, researcher has tried to develop an e-module product assisted on Augmented Reality (AR) for class X high school virus material. The e-module can visualize the shape of the virus so that it can support the achievement of learning objectives. The purpose of this study was to develop and find out the feasibility of Augmented Reality-Assisted E-Module on Virus material for 10th grade students.*

*The research conducted was development research with the ADDIE model design (Analysis, Design, Development, Implementation, and Evaluation) which was then readjusted so that it only reached the third stage, namely development. The stages carried out are in the form of needs analysis in 6 high schools, followed by product design, product development and then continued with the feasibility test of the resulting product.*

*The results of the product development research showed that the developed AR-assisted e-module have been developed with complete components including learning objectives, indicators, materials, AR-assisted images, quizzes and evaluations. The results of the feasibility test obtained the percentage of material validation scores is 90.8% with the criteria of "Very High" and the media validation score is 94.2% with the criteria of "Very High". The final average obtained is 92.5% which is included in the "Very High" validation criteria. This showed that the Augmented Reality (AR) assisted e-module on Virus material for 10th grade students deserved to be tested according to the suggestion.*

***Keywords***: *E-module, Augmented Reality, Virus, Research and Development*