

**PENGEMBANGAN MEDIA *INTERACTIVE VIRTUAL LABORATORY*
SIMULATOR (INVILATOR) MENGGUNAKAN ADOBE ANIMATE PADA
MATERI SISTEM SIRKULASI KELAS XI**

Oleh

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ABSTRAK

Tujuan dari penelitian ini adalah untuk menentukan rancang bangun, validitas, dan kepraktisan media *virtual laboratory* yang menggunakan adobe animate pada materi sistem sirkulasi kelas XI. Karena keterbatasan jenis penelitian ini, yang menggunakan model instruksional ADDIE, terdiri dari tiga tahapan yaitu analisis (*analyze*), perancangan (*design*), dan pengembangan (*development*). Uji yang dilakukan yaitu uji oleh dua ahli bidang materi dan dua ahli dalam bidang media, serta uji kepraktisan dilakukan oleh 3 guru biologi (uji coba perorangan) dan 12 siswa kelas XI di SMA Negeri 1 Melaya (uji coba kelompok kecil). Subyek uji cobanya yaitu siswa yang mempunyai kemampuan kognitif tingkat tinggi, sedang, dan rendah. Hasil penelitian dianalisis secara deskriptif kualitatif dan kuantitatif. Berdasarkan hasil penelitian didapatkan, (1) rancang bangun penelitian pengembangan menghasilkan produk media *virtual laboratory* menggunakan *adobe animate* pada materi sistem sirkulasi kelas XI; (2) Validitas media dari aspek materi dan media termasuk kriteria sangat valid dengan skor nilai 4,58; dan (3) Kepraktisan media yang dilakukan termasuk kriteria sangat praktis, karena mendapatkan nilai persentase sebesar 96,97% (3 guru biologi) dan sebesar 92,5% (kelompok kecil). Hasil penelitian menunjukkan bahwa media *virtual laboratory* sangat layak dan dapat digunakan secara praktis sebagai media pembelajaran alternatif untuk membantu memfasilitasi kegiatan pembelajaran, terutama materi yang termasuk sistem sirkulasi kelas XI.

Kata Kunci: ADDIE, Invilator, Media, Sistem Sirkulasi, *Virtual Laboratory*.

**DEVELOPMENT OF INTERACTIVE VIRTUAL LABORATORY
SIMULATOR (INVILATOR) MEDIA USING ADOBE ANIMATE ON
CIRCULATION SYSTEM MATERIAL CLASS XI**

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ABSTRACT

The purpose of this research was to evaluate the virtual laboratory media, a grade XI circulatory system simulator, in terms of its design, validity, and usability using Adobe Animate. Because the research was restricted to three stages—analysis, design, and development—it was a research and development study that used the ADDIE instructional approach. Two media experts and two subject matter experts evaluated the tests, while three biology instructors conducted solo trials and twelve grade XI students from SMA Negeri 1 Melaya conducted small group trials for practicality. Students with high, moderate, and low cognitive capacities made up the test subjects. The descriptive analysis of the research findings included both qualitative and quantitative analysis. According on the study's findings, the following conclusions were drawn: (1) The development research design produced the virtual laboratory media product, which used Adobe Animate to address the circulatory system in class XI. (2) The media's validity in terms of content and media aspects was highly valid, receiving a score of 4.58; (3) The media's practicality was also highly practical, receiving percentage scores of 92.5% (small group) and 96.97% (3 biology teachers). Based on the results of this study, the virtual laboratory media was shown to be extremely appropriate and useful as a substitute learning medium for enhancing classroom activities. This is particularly relevant for the class XI topic on the circulatory system.

Keywords: *ADDIE, Circulatory System, Media, Invilator, Virtual Laboratory.*