

**PENGEMBANGAN BAHAN AJAR BERBASIS *AUGMENTED REALITY* (AR)
PADA MATERI SISTEM PERTAHANAN TUBUH
UNTUK PESERTA DIDIK KELAS XI DI SMA N 2 SINGARAJA**

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ABSTRAK

Penelitian ini bertujuan untuk menghasilkan produk bahan ajar berbasis *Augmented Reality* (AR) untuk materi sistem pertahanan tubuh kelas XI di SMA N 2 Singaraja yang valid dan praktis. Subjek pada penelitian ini adalah ahli materi, ahli media, ahli bahasa yang masing-masing berjumlah dua orang, tiga orang guru dan peserta didik kelas XI C di SMA N 2 Singaraja yang berjumlah 39 orang. Penelitian ini menggunakan jenis penelitian pengembangan R&D (*Research and Development*) yang menggunakan langkah – langkah pengembangan dari model pengembangan 4-D (*Define, Design, Development, Disseminate*). Metode pengumpulan data yang digunakan, yakni wawancara, observasi, kuesioner, dan instrumen penilaian validitas serta kepraktisan. Teknik analisis data menggunakan analisis deskriptif kuantitatif dan deskriptif kualitatif. Hasil penelitian pengembangan ini adalah produk bahan ajar biologi pada materi sistem pertahanan tubuh, meliputi hasil: (a) rancang bangun bahan ajar berbasis *Augmented Reality* (AR) untuk materi sistem pertahanan tubuh; (b) hasil uji validitas produk yang terdiri dari: (1) uji validitas materi memperoleh hasil 93,5% termasuk dalam kategori sangat valid; (2) uji validitas media memperoleh hasil 96,5% termasuk dalam kategori sangat valid; dan (3) uji validitas bahasa memperoleh hasil 94% termasuk dalam kategori sangat valid; (c) uji kepraktisan oleh guru yang memperoleh hasil 91% termasuk dalam kategori sangat praktis; (d) uji kepraktisan oleh peserta didik yang memperoleh hasil 85% yang termasuk dalam kategori sangat praktis. Sehingga dapat disimpulkan bahwa bahan ajar berbasis *Augmented Reality* (AR) untuk materi sistem pertahanan tubuh valid dan praktis untuk digunakan dalam proses pembelajaran.

Kata Kunci: 4D; *Augmented Reality*; Bahan Ajar; Sistem Pertahanan Tubuh

**DEVELOPMENT OF AUGMENTED REALITY (AR)-BASED TEACHING
MATERIALS ON THE SUBJECT OF THE BODY'S DEFENSE SYSTEM FOR
ELEVENTH GRADE STUDENTS AT SMA N 2 SINGARAJA**

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ABSTRACT

The main purpose of this development research was to produce Augmented Reality (AR)-based teaching materials for the body defence system class XI at SMA N 2 Singaraja that are valid and practical. The subjects in this study were material experts, media experts, linguists who each amounted to two people, three teachers and students of class XI C at SMA N 2 Singaraja totaling 39 people. This research used the type of R&D (Research and Development) development research that used the development steps of the 4-D development model (Define, Design, Develop, Disseminate). The data collection methods used were interviews, observations, questionnaires, and validity and practicality assessment instruments. The data analysis technique used were quantitative descriptive analysis and qualitative descriptive analysis. The results of this development research were biology teaching material products on the material of the body's defense system, and the results included: (a) the design of Augmented Reality (AR) based teaching materials for the material of the body's defense system; (b) the results of the product validity test consisting of: (1) the material validity test obtained the results of 93.5% which was included in the very valid category; (2) the media validity test obtained the results of 96.5% which was included in the very valid category; and (3) the language validity test obtained the results of 94% which was included in the very valid category; (c) practicality test by teachers who obtained the results of 91% which was included in the very practical category; (d) practicality test by students who obtained the results of 85% which was included in the category of very practical. So it could be concluded that Augmented Reality (AR) based teaching materials for the material of the body's defense system are valid and practical for use in the learning process.

Keyword: 4D; Augmented Reality; Teaching Materials; The Bodys Defense System