

ABSTRAK

Dari hasil observasi yang dilakukan peneliti, siswa mengalami kesulitan dalam memahami materi sistem pernapasan manusia karena materi sulit untuk diamati secara langsung. Kesulitan tersebut juga diakibatkan oleh penggunaan media pembelajaran yang masih bersifat konvensional seperti buku, ppt dan internet. Selain itu, tingkat penggunaan *smartphone* pada siswa sangat tinggi. Mengacu pada permasalahan tersebut peneliti bertujuan mengembangkan media pembelajaran berbasis *virtual reality* pada materi sistem pernapasan manusia untuk siswa SMA kelas XI jurusan Ilmu Pengetahuan Alam. Penelitian pengembangan atau *Research and Development* (R&D) ini menggunakan model pengembangan ADDIE yang terdiri dari 5 tahap yaitu: (1) *analysis*, (2) *design*, (3) *development*, (4) *implementation*, (5) *evaluation*. Langkah awal dalam penelitian ini yaitu analisis kebutuhan yang mencakup perangkat lunak dan perangkat keras. Kemudian perancangan desain media pembelajaran dalam bentuk *flowchart* dan *storyboard*. Rancangan desain yang sudah dibuat kemudian diwujudkan menjadi produk media pembelajaran yang siap diterapkan. Uji kelayakan produk media pembelajaran dilakukan oleh ahli materi, ahli media, peserta didik dan uji fungsionalitas media. Uji coba pada peserta didik dilakukan secara perorangan dengan jumlah 3 siswa dan kelompok kecil dengan jumlah 6 siswa. Hasil penelitian menunjukkan bahwa: (1) ahli materi diperoleh persentase 85%, menunjukkan media ini valid digunakan; (2) ahli media diperoleh persentase 91%, menunjukkan media ini valid digunakan; (3) uji coba peserta didik perorangan diperoleh persentase 90%, menunjukkan media ini valid digunakan; dan (4) uji coba peserta didik kelompok kecil diperoleh persentase 94%, menunjukkan media ini valid digunakan. Berdasarkan hasil tersebut dapat disimpulkan bahwa media pembelajaran sistem pernapasan manusia berbasis *virtual reality* validan dan sangat layak untuk diterapkan dalam pembelajaran.

Kata kunci: *Virtual reality*, media pembelajaran, sistem pernapasan manusia, ADDIE.

ABSTRACT

From the results of observations made by researchers, students have difficulty understanding the material of the human respiratory system because the material is difficult to observe directly. This is also caused by the use of conventional learning media such as books, ppt, and the internet. In addition, the level of smartphone use among students is very high. Referring to these problems, the researcher aims to develop virtual reality-based learning media on the human respiratory system material for high school students in class XI majoring in Natural Sciences. This research and development (R&D) use the ADDIE development model which consists of 5 stages, namely: (1) analysis, (2) design, (3) development, (4) implementation, (5) evaluation. The first step in this research is a needs analysis that includes software and hardware. Then the design of learning media designs in the form of flowcharts and storyboards is carried out. The designs that have been made are then realized into learning media products that are ready to be applied. The feasibility test of learning media products is carried out by material experts, media experts, students, and media functionality tests. Tests on students were carried out individually with 3 students and in small groups with 6 students. The results showed that: (1) expert material obtained a percentage of 85%, indicating that a valid media was used; (2) media experts obtained a percentage of 91%, indicating that this media is valid to use; (3) individual student trials obtained a percentage of 90%, indicating a valid media used; and (4) small group student trials obtained a percentage of 94%, indicating a valid media used. Based on these results, it can be obtained that the virtual reality-based learning media for the human respiratory system is valid and very feasible to be applied in learning.

Keywords: Virtual reality, learning media, human respiratory system, ADDIE.