INTISARI

Latar Belakang: Berdasarkan penelitian, fisiologi merupakan ilmu kedokteran yang menantang, termasuk fisiologi kardiovaskular. Pengembangan metode pembelajaran maupun media ajar untuk mempermudah peyampaian materi fisiologi juga belum banyak dijumpai. Pada tahun 2022, Departemen Kardiologi dan Kedokteran Vaskular FK-KMK UGM telah mengembangkan aplikasi pembelajaran berbasis *Augmented Reality*(AR) yaitu "GAMA Cardiac AR" yang dilengkapi dengan tiga modul. Akan tetapi modul fisiologi dan elektrofisiologi belum dilakukan validasi dan uji coba pada lingkungan mahasiswa. Dengan dilaksanakannya validasi dosen pakar, umpan balik yang didapat akan digunakan sebagai dasar implementasi penguatan aplikasi.
Tujuan: Penelitian ini bertujuan untuk mengetahui hasil validasi dan persepsi dari dosen pakar terhadap aplikasi GAMA Cardiac AR Modul Fisiologi dan Modul Elektrofisiologi sebagai media pembelajaran fisiologi jantung bagi mahasiswa kedokteran.
Metode: Penelitian ini menggunakan metode campuran eksplanatori (*explanatory mixed method*). Penelitian ini menggabungkan dua fase desain studi, yaitu kualitatif dan kuantitatif. Data kualitatif diambil dengan meminta pendapat ahli (*expert opinion*) melalui wawancara sedangkan data kuantitatif diambil dengan instrumen kuesioner. Subyek penelitian ini adalah empat orang dosen pakar Departemen Fisiologi dan empat orang dosen pakar Departemen Kardiologi FK-KMK UGM sebagai ahli materi serta empat orang dosen pakar Departemen Teknik Elektro dan Teknologi Informasi FT UGM sebagai ahli media. Data kualitatif akan dianalisis dan dikategorikan menggunakan metode analisis tematik. Sedangkan data kuantitatif akan dianalisis menggunakan teori Nana Sudjana (2016).
Hasil: Persepsi ahli dinilai terhadap lima aspek. Dalam apek desain, aplikasi dinilai memiliki tampilan menarik dan mudah digunakan. Dalam aspek materi, ahli menilai materi cukup jelas, sesuai teori dan kurikulum dengan fitur dan materi yang saling berkesinambungan serta kuis sudah sesuai materi. Dalam aspek *software*, aplikasi dinilai intuitif dan interaktif dengan catatan beberapa saran perbaikan pada *event handler*. Dalam aspek kebermanfaatan, aplikasi dianggap mampu membantu pengguna memvisualisasikan bagaimana jantung bekerja sehingga memudahkan pengguna memahami fisiologi dan elektrofisiologi jantung. Dalam aspek nilai penggunaan, ahli menyatakan aplikasi bisa diujicobakan pada populasi yang lebih luas serta menyarankan untuk dikembangkan modul patologi jantung dan penambahan fitur perubahan bahasa inggris-indonesia. Data kuantitatif dinilai dalam lima aspek yang sama mendapat hasil penilian dengan kategori sangat layak untuk semua aspek.
Kata Kunci: fisiologi, kardiologi, *augmented reality*, media ajar, validasi pakar

ABSTRACT

Background: Based on research, physiology is a challenging medical science, including cardiovascular physiology. The development of learning methods and teaching media to facilitate the delivery of physiology material is also not common. In 2022, the Department of Cardiology and Vascular Medicine FK-KMK UGM developed an Augmented Reality (AR) based learning application, namely "GAMA Cardiac AR" which is equipped with three modules. However, the physiology and electrophysiology modules have not been validated and tested in a student environment. By carrying out expert lecturer validation, the feedback obtained will be used as a basis for implementing application strengthening.
Objectives: This study aims to determine the validation results and perceptions of expert lecturers regarding the application of the GAMA Cardiac AR Physiology Module and Electrophysiology Module as a medium for medical students to learn cardiac physiology.
Methods: This research uses an explanatory mixed method. This research combines two study design phases, namely qualitative and quantitative. Qualitative data was taken by asking for expert opinion through interviews, while quantitative data was taken using a questionnaire instrument. The subjects of this research were four expert lecturers from the Department of Physiology and four expert lecturers from the Department of Cardiology, FK-KMK UGM as material experts. Then four expert lecturers from the Department of Electrical Engineering and Information Technology, FT UGM as media experts. Qualitative data will be analyzed and categorized using the thematic analysis method. Meanwhile, quantitative data will be analyzed using Nana Sudjana's theory (2016).
Results: Expert perceptions were assessed on five aspects. In terms of design, the application is considered to have an attractive appearance and is easy to use. In the material aspect, the expert assessed that the material was quite clear, by theory and curriculum with features and material that were mutually continuous and the quizzes were appropriate to the material. In the software aspect, the application is considered intuitive and interactive with several suggestions for improvements to the event handler. In terms of usefulness, the application is considered capable of helping users visualize how the heart works, making it easier for users to understand the physiology and electrophysiology of the heart. In terms of use value, the expert stated that the application could be tested on the wider population, and suggested developing a cardiac pathology module and adding an English-Indonesian language change feature. Quantitative data was assessed in the same five aspects, and assessment results were received in the very appropriate category for all aspects.
Keywords: physiology, cardiology, augmented reality, teaching media, expert validation