

Evaluasi Usability dan User Experience Prototipe Sistem Rekam Medis Elektronik Dengan Fitur Speech-to-Text Berbasis Kecerdasan Buatan Pada Dua Rumah Sakit Swasta Di Jakarta

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Abstrak

Penggunaan Rekam Medis Elektronik (RME) mempunyai tantangan tersendiri dalam praktiknya. Meski tak dipungkiri memiliki manfaat, namun masih ada inefisiensi dan inefektivitas dalam implementasinya dalam praktik klinis. Salah satunya gangguan komunikasi dan interaksi dokter-pasien sebagai akibat dari teralihkannya fokus dokter pada layar komputer acap kali terjadi terutama pada pasien rawat jalan baru. Dalam sistem RME penilaian efisiensi dan efektivitas ini dilakukan menggunakan SUS (System Usability Scale) dan UEQ (User Experience Questionnaire) yang berisikan sejumlah pertanyaan yang mewakili efisiensi dan efektivitas. Solusi dari masalah tersebut mungkin bisa terjawab dengan fitur speech-to-text sebagai bagian kecerdasan buatan serta pengintegrasian RME dalam kecerdasan buatan. Penelitian ini merupakan penelitian kuantitatif dengan desain potong lintang. Dokter-dokter spesialis selaku responden melakukan penilaian terhadap dua sistem, yaitu RME dan prototipe sistem RME dengan fitur speech-to-text berbasis kecerdasan buatan, yaitu perubahan percakapan menjadi tulisan dalam komputer RME yang kemudian diintegrasikan kecerdasan buatan yang sudah ada dalam dunia kecerdasan buatan (misal: gemini AI). Usability diukur menggunakan System Usability Scale (SUS), sedangkan user experience diukur menggunakan User Experience Questionnaire (UEQ). Hasil penelitian menunjukkan bahwa RME yang digunakan saat ini mendapat median skor SUS 57,5 (5-70) dengan kategori usability "marginal" (mendekati "not acceptable") dan user experience mendapat skor Daya tarik: 0,401; Kejelasan: 0,648; Efisiensi: 0,234; Ketepatan: 0,508; Stimulasi: 0,352; Kebaruan: -0,07 dengan kategori "bad" pada seluruh komponennya. Sementara itu, prototipe sistem RME dengan fitur speech-to-text berbasis kecerdasan buatan memiliki rerata skor SUS 69,143 dengan kategori "marginal" (mendekati "acceptable") dan user experience dengan skor Daya tarik: 1,880; Kejelasan: 1,813; Efisiensi: 1,852; Ketepatan: 1,172; Stimulasi: 1,938; Kebaruan: 2,078 dan termasuk "excellent" pada kategori daya tarik, stimulasi, dan kebaruan, "good" pada kategori kejelasan dan efisiensi, atau "above average" pada kategori ketepatan. Terdapat perbedaan yang bermakna antara kedua sistem RME, baik pada usability maupun user experience. Kesimpulannya skor SUS dan UEQ prototipe yang dibuat ini lebih dapat diterima daripada RME sebelumnya.

The use of Electronic Medical Records (EMRs) in clinical practice still faces several challenges. Even with numerous benefits, there are multiple inefficiencies and ineffectiveness in implementing through clinical practice. Doctor–patient communication is often disrupted and interaction may decline because physicians’ attention is frequently diverted to computer screens, especially towards newly admitted outpatients. In this EMR system, the evaluation of efficiency and effectiveness is conducted using System Usability Scale (SUS) and the User Experience Questionnaire (UEQ), which consists of a series of questions representing both efficiency and effectiveness. The proposed solution to these issues may be addressed through the implementation of speech-to-text features as part of artificial intelligence, as well as the integration of EMR systems with artificial intelligence. This study was a quantitative study with a cross-

sectional design. Specialist physicians, as respondents, evaluated two systems: the existing EMR and an EMR prototype with an artificial intelligence–based speech-to-text feature, which converts spoken conversations into written text within the EMR system and is further integrated with existing artificial intelligence technologies (i.e., gemini artificial intelligence). Usability was measured using the System Usability Scale (SUS), while user experience was measured using the User Experience Questionnaire (UEQ). The results showed that the current EMR had a median SUS score of 57.5 (5–70), categorized as “marginal” usability and close to “not acceptable,” while its user experience scores were Attractiveness: 0.401; Perspicuity: 0.648; Efficiency: 0.234; Dependability: 0.508; Stimulation: 0.352; and Novelty: -0.07, all of which were categorized as “bad” in all of its components. Meanwhile, the EMR prototype with an artificial intelligence–based speech-to-text feature had a mean SUS score of 69 ± 14.3, categorized as “marginal” usability and close to “acceptable.” Its user experience scores were Attractiveness: 1.880; Perspicuity: 1.813; Efficiency: 1.852; Dependability: 1.172; Stimulation: 1.938; and Novelty: 2.078, which were categorized as “excellent” for attractiveness, stimulation, and novelty; “good” for perspicuity and efficiency; and “above average” for dependability. There were statistically significant differences between the two EMR systems in both usability and user experience. The conclusion is that the SUQ and UEQ scores in this prototype is more acceptable than the old EMR.</p><p> </p>