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CHATBOT SYSTEMS FOR STUDENTS AND PATIENTS: ARTIFICIAL INTELLIGENCE CHATBOTS FOR MEDICAL ADVICE

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Abstract: The rapid development of artificial intelligence (AI) has created new opportunities for improving educational processes and healthcare services. Chatbot systems are increasingly used to provide students with personalized learning support and patients with accessible health-related information. AI-powered chatbots can answer questions, explain complex concepts, assist with educational activities, provide general health information, and guide users toward appropriate healthcare services. This article examines the applications of chatbot systems in education and medicine, focusing on their technological capabilities, potential benefits, limitations, and ethical implications.
Keywords: artificial intelligence, chatbots, educational technology, medical advice, healthcare, personalized learning, patient support, data privacy.

Аннотация: Стремительное развитие технологий искусственного интеллекта создает новые возможности для совершенствования образовательных процессов и медицинских услуг. Чат-боты все чаще используются для предоставления студентам индивидуальной образовательной поддержки, а пациентам — доступной информации о здоровье. Чат-боты на основе искусственного интеллекта способны отвечать на вопросы, объяснять сложные понятия, помогать в учебной деятельности, предоставлять общую медицинскую информацию и направлять пользователей к соответствующим медицинским услугам. В статье рассматриваются применение чат-ботов в образовании и медицине, их технологические возможности, преимущества, ограничения и этические аспекты.
Ключевые слова: искусственный интеллект, чат-боты, образовательные технологии, медицинские консультации, здравоохранение, персонализированное обучение, поддержка пациентов, конфиденциальность данных.

Introduction: Artificial intelligence has become an important component of digital transformation in education and healthcare. Among the emerging AI applications, chatbot systems have attracted considerable attention because they enable users to communicate with computer systems through natural language. Unlike traditional information systems that require users to navigate menus or search through large collections of documents, conversational systems allow users to formulate questions in their own words.In education, chatbots can function as virtual teaching

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assistants by explaining concepts, generating practice questions, recommending learning resources, and providing immediate feedback. A systematic review by Labadze et al. (2023) identifies several potential benefits of AI chatbots for students and educators, including learning support, accessibility, and assistance with routine educational tasks. Research on educational chatbot interaction also highlights personalized learning and learner engagement as important areas of application

Materials and Methods: This article employs a narrative literature review approach. Selected scientific publications on educational chatbots, conversational agents, and AI-assisted healthcare were examined alongside WHO guidance on the ethics and governance of artificial intelligence in health. The literature was considered in relation to four themes: educational applications, medical information services, potential benefits, and safety and ethical challenges.The review is descriptive and analytical rather than an original clinical experiment or a systematic review with quantitative meta-analysis.

Providing general medical information: Patients frequently seek information about symptoms, preventive measures, medication instructions, healthy lifestyles, and chronic disease management. A medical chatbot can explain medical terminology in accessible language and provide general educational information at any time.For example, a patient who has received a diagnosis from a healthcare professional may ask a chatbot to explain the meaning of a medical term or clarify general recommendations for preparing for a scheduled examination. The chatbot can help the patient formulate additional questions for the next consultation.

Supporting healthcare professionals: AI chatbots can assist healthcare organizations by answering frequently asked questions, providing patient education materials, helping users navigate appointment systems, and supporting administrative communication. With appropriate safeguards, AI systems may also assist professionals in preparing summaries of medical information or locating relevant clinical guidance.Nevertheless, outputs that influence clinical decisions require appropriate verification.

Conclusion: AI chatbot systems offer promising opportunities to improve access to information and support communication in education and healthcare. For students, they can provide explanations, practice activities, personalized learning assistance, and answers to routine academic questions. For patients, they can offer general health information, explain medical terminology, support preventive education, and facilitate navigation of healthcare services.At the same time, chatbot systems have important limitations related to accuracy, privacy, bias, transparency, and excessive reliance on automated outputs. Their implementation should therefore be based on reliable information sources, systematic testing, clear responsibility, and continuous monitoring.

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