DEVELOPMENT OF AN INFORMATION SERVICE CHATBOT USING THE RETRIEVAL AUGMENTED GENERATION ALGORITHM AT LUQMAN AL HAKIM INTEGRAL ELEMENTERY SCHOOL SITUBONDO

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ABSTRACT

SD Integral Luqman Al Hakim Situbondo is an educational institution that has utilized technologies such as social media and websites to provide access to information. However, the existing information services are considered less effective as they still rely on human operators who cannot always provide immediate responses, compounded by limited operational hours during the standard workday. This research aims to develop an information service chatbot capable of answering inquiries automatically, accurately, and relevantly based on the school's information. The chatbot was developed using the Waterfall method and the Retrieval-Augmented Generation (RAG) algorithm, integrated with a speech-to-text feature and follow-up question recommendations. System evaluations were conducted through Human Evaluation, User Acceptance Testing (UAT), and Blackbox testing. The Human Evaluation results yielded a correctness score of 97%, completeness of 96.7%, and communication of 96.7%. Furthermore, the UAT involving 38 respondents achieved a score of 88.40%, which falls into the "Highly Feasible" category, while the Blackbox testing demonstrated that all chatbot functions operated optimally. Therefore, the developed chatbot has proven to be an effective tool for facilitating school information services.

Key words: *Chatbot*, *Retrieval Augmented Generation* (RAG), *Information Service*, *Large Language Model*