PENGEMBANGAN SISTEM UJIAN BERBASIS CBT UNTUK SMPN 197 JAKARTA MENGGUNAKAN *NEXT.JS*

Syahrul Ramadhan

ABSTRAK

SMPN 197 Jakarta telah menerapkan sistem *Computer-Based Test* (CBT) berbasis PHP, namun masih memiliki beberapa keterbatasan, seperti variasi tipe soal yang terbatas, pengelolaan bank soal yang belum efisien, pemantauan ujian yang belum optimal, serta belum tersedianya mekanisme *Auto-Save*, *Session Recovery*, dan *Anti-Cheating*. Penelitian ini bertujuan mengembangkan sistem CBT berbasis *Next.js* yang mampu memenuhi kebutuhan pelaksanaan ujian digital di SMPN 197 Jakarta. Metode yang digunakan adalah *Research and Development* (R&D) dengan model ADDIE yang meliputi tahap *Analysis*, *Design*, *Development*, *Implementation*, dan *Evaluation*. Sistem yang dikembangkan mendukung sembilan variasi tipe soal, fitur *Import Wizard* berbasis *Microsoft Excel*, pelaksanaan ujian secara *real-time*, mekanisme *Anti-Cheating*, *Auto-Save*, *Session Recovery*, *monitoring* ujian, penilaian otomatis maupun manual, serta pelaporan hasil ujian. Evaluasi dilakukan menggunakan *Black Box Testing*, pengujian performa menggunakan *k6*, *User Acceptance Testing* (UAT), dan *System Usability Scale* (SUS). Hasil pengujian menunjukkan seluruh fungsi sistem berjalan sesuai kebutuhan, memiliki performa yang stabil, diterima oleh pihak sekolah, serta memperoleh skor SUS sebesar 82,98 yang termasuk kategori *Acceptable*, *Grade Scale* B, dan *Excellent*. Hasil tersebut menunjukkan bahwa sistem layak digunakan untuk mendukung pelaksanaan ujian berbasis digital di SMPN 197 Jakarta.

Kata Kunci: *Computer-Based Test* (CBT)*, Next.js,* Sistem Ujian*, Import Wizard, Anti-Cheating.*

DEVELOPMENT OF A CBT-BASED EXAMINATION SYSTEM FOR SMPN 197 JAKARTA USING NEXT.JS

Syahrul Ramadhan

ABSTRACT

SMPN 197 Jakarta has implemented a PHP-based Computer-Based Test (CBT) system; however, the existing system still has several limitations, including limited question types, inefficient question bank management, suboptimal examination monitoring, and the absence of Auto-Save, Session Recovery, and Anti-Cheating mechanisms to support examination security. This study aims to develop a Next.js-based CBT system that meets the requirements of digital examination implementation at SMPN 197 Jakarta. The research employed the Research and Development (R&D) method using the ADDIE model, which consists of the Analysis, Design, Development, Implementation, and Evaluation phases. The developed system provides nine question types, a Microsoft Excel-based Import Wizard, real-time examination, Anti-Cheating mechanisms, Auto-Save, Session Recovery, examination monitoring, automatic and manual grading, and examination reporting features. The system was evaluated using Black Box Testing, performance testing with k6, User Acceptance Testing (UAT), and the System Usability Scale (SUS). The evaluation results indicate that all system functions operated as expected, the system maintained stable performance under various testing scenarios, and it was well accepted by users. Furthermore, the usability evaluation achieved an SUS score of 82.98, which falls within the Acceptable category, received a Grade B rating, and was classified as Excellent. These findings indicate that the developed system is suitable for supporting digital examination implementation at SMPN 197 Jakarta.

Keywords: *Computer-Based Test (CBT), Next.js, Examination System, Import Wizard, Anti-Cheating.*