



ABSTRAK

Mahasiswa pendidikan tinggi dituntut belajar mandiri, namun kemampuan *Self-Regulated Learning* (SRL) sering belum optimal karena aktivitas perencanaan, pelaksanaan, dan refleksi kurang terstruktur serta jarang terdokumentasi. Berbagai alat pendukung SRL telah dikembangkan, tetapi banyak yang masih terbatas pada fungsionalitas *task management* dan belum dipetakan secara eksplisit ke fase SRL, sehingga dukungannya belum komprehensif. Kondisi ini menunjukkan perlunya alat yang memfasilitasi seluruh fase SRL dan menyediakan umpan balik berbasis data.

Penelitian ini merancang dan mengevaluasi *Kanban Learning Board* untuk mendukung fase SRL perencanaan, pelaksanaan, dan refleksi. Penelitian menggunakan *mixed-method theory-driven design* dengan uji coba dua tahap, yaitu fase 1 (n=33) dan fase 2 (n=156) pada mahasiswa Teknik Informatika (Politeknik Negeri Jember) serta Teknologi Informasi, Teknik Elektro, dan Teknik Biomedis (Universitas Gadjah Mada). Desain mengadopsi konsep Kanban yang dipetakan ke fase SRL Zimmerman dan indikator SRL sebagai dasar perancangan fitur antarmuka, lalu divalidasi oleh pakar. Data dikumpulkan melalui MSLQ, UEQ, log aktivitas, dan wawancara, kemudian dianalisis dengan statistik deskriptif, uji *pre-post*, analisis log, dan analisis tematik.

Hasil menunjukkan desain *Kanban Learning Board* mencakup seluruh fase SRL dan paling kuat mendukung fase perencanaan, sementara dukungan pada pelaksanaan dan terutama refleksi masih terbatas. Pada fase 1, *Kanban Learning Board* meningkatkan beberapa aspek motivasi belajar, tetapi pada fase 2 tidak ditemukan perubahan signifikan pada motivasi maupun strategi belajar, dengan pemanfaatan yang didominasi oleh pengguna sangat aktif. Pengguna menilai sistem membantu memvisualisasikan tugas, mengatur prioritas, dan memantau progres, namun fitur refleksi dan alur penggunaan masih perlu penyempurnaan. Temuan ini menunjukkan *Kanban Learning Board* berpotensi memfasilitasi SRL, khususnya pada fase perencanaan dan pelaksanaan, dengan penguatan lanjutan pada fase refleksi.

Kata kunci—*Self-Regulated Learning, Kanban Learning Board, Regulasi Diri Mahasiswa, MSLQ, UEQ, Trace Interaction Log Analysis, Validasi Pakar.*



ABSTRACT

Higher-education students are expected to learn independently. However, their Self-Regulated Learning (SRL) skills are often suboptimal because planning, execution, and reflection are insufficiently structured and rarely documented. Various SRL-support tools exist, yet many offer limited task-management functionality and are not explicitly mapped to SRL phases, resulting in less comprehensive support. In addition, instructors often remain central to learning regulation, limiting students' SRL autonomy. These conditions highlight the need for a tool that supports all SRL phases and provides data-driven feedback.

This study designs and evaluates a Kanban Learning Board to support SRL phases of planning, execution, and reflection. The study employs a mixed-method, theory-driven design with a two-stage field trial, phase 1 (n=33) and phase 2 (n=156), involving students from Informatics Engineering (Politeknik Negeri Jember) and Information Technology, Electrical Engineering, and Biomedical Engineering (Universitas Gadjah Mada). The design adopts Kanban principles mapped to Zimmerman's SRL phases and SRL indicators to guide interface features, and it is expert-validated. Data are collected via MSLQ, UEQ, activity logs, and interviews, and analyzed using descriptive statistics, pre-post tests, log analysis, and thematic analysis.

Results show the Kanban Learning Board covers all SRL phases and most strongly supports planning, while support for execution and especially reflection remains limited. In phase 1, the Kanban Learning Board improved several motivation aspects. However, in phase 2, no significant changes were found in motivation or learning strategies, with usage dominated by highly active users. Users reported that the system helps visualize tasks, set priorities, and monitor progress, but reflection features and the usage flow still require refinement. These findings suggest the Kanban Learning Board can facilitate SRL, particularly planning and execution, with further strengthening needed for reflection.

Keywords—Self-Regulated Learning, Kanban Learning Board, Students' Self Regulation, MSLQ, UEQ, Trace Interaction Log Analysis, Expert Judgment.