

**DEVELOPMENT OF A ROBLOX-BASED LEARNING MANAGEMENT SYSTEM
(LMS) TO ENHANCE STUDENT ENGAGEMENT AND LEARNING MOTIVATION**

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.


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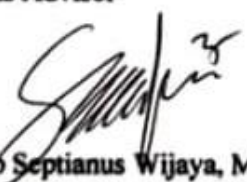
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ABSTRACT

DEVELOPMENT OF ROBLOX-BASED LMS TO IMPROVE STUDENT ENGAGEMENT

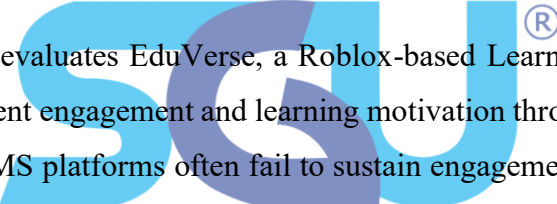
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 This study develops and evaluates EduVerse, a Roblox-based Learning Management System designed to enhance student engagement and learning motivation through game-based learning principles. Traditional LMS platforms often fail to sustain engagement due to static interfaces and limited interactivity. EduVerse addresses this gap by integrating course management, content delivery, assessment, progress tracking, and a turn-based battle quiz system within an immersive 3D environment built using Roblox Studio and Lua.

The study uses a mixed methods design combining a one-group pre-test post-test approach with structured observation and thematic analysis of open-ended responses. Twenty-two university students participated in the pilot session at Swiss German University.

Overall motivation improved significantly ($t = 3.783$, $p = 0.001$, $d = 0.807$) and overall engagement improved significantly ($t = 2.190$, $p = 0.040$, $d = 0.467$). Competence produced the strongest effect ($p < 0.001$, $d = 1.116$). A strong positive correlation was found between emotional engagement and overall engagement ($r = 0.862$, $p < 0.001$). Triangulation confirmed convergent findings across all three data sources. The battle quiz system was identified as the primary driver of engagement and motivation.

Keywords: *game-based learning, learning management system, Roblox, student engagement, learning motivation, gamification, EduVerse, Self-Determination Theory.*



DEDICATION

To the future of education technology in Indonesia, and to every educator willing to try something new.



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