

EFFECTIVENESS OF HOTS-BASED GAME-BASED LEARNING ON CRITICAL THINKING ABILITIES AND NUMERATION LITERACY OF GRADE IV STUDENTS OF LAMBUNU ELEMENTARY SCHOOL, PARIGI MOUTONG DISTRICT

Ayu Ashari ^{1*}, Besse Nurul Hikmah ¹, Sahrul Syawal ¹

¹ Universitas Negeri Makassar

Article Info

Article history:

Received May 19, 2026

Revised June 18, 2026

Accepted June 28, 2026

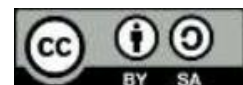
Keywords:

Game-Based Learning, Critical Thinking Skills, Numeracy Literacy, Hots, Elementary School

ABSTRACT

This study aims to analyze the effectiveness of game-based learning based on Higher Order Thinking Skills (HOTS) on the critical thinking skills and numeracy literacy of fourth-grade students of SDN Lambunu, Parigi Moutong Regency. The method used is quantitative with a quasi-experimental nonequivalent control group design. The sample consisted of 56 students divided into experimental and control groups. The research instrument was a validated critical thinking and numeracy literacy test. Data were analyzed using the Shapiro-Wilk normality test, Levene's homogeneity test, independent sample t-test, and N-gain score. The results showed that there were significant differences between the two groups in critical thinking skills ($t = 9.847$; $p = 0.000$) and numeracy literacy ($t = 10.213$; $p = 0.000$). The posttest mean of the experimental group was higher than the control group in both variables. The N-gain value of the experimental group was 0.61 and 0.60, which are in the medium category, while the control group only achieved the low category. It was concluded that HOTS-based game-based learning has been proven to be effective in improving critical thinking skills and numeracy literacy of elementary school students and is worthy of wider implementation in educational contexts, base in remote areas.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Ayu Ashari | Universitas Negeri Makassar

Email: ayuashariblk@gmail.com
