

## ABSTRAK

### PENGEMBANGAN GAME “MATH HERO” UNTUK MENINGKATKAN PEMAHAMAN SISWA SEKOLAH DASAR PADA KONSEP OPERASI ARITMATIKA

Oleh

**M. Dzaky Fadhil Athaya**

Matematika sering dianggap sebagai mata pelajaran yang sulit untuk dipelajari bagi siswa sekolah dasar. Penggunaan teknologi, khususnya *game* edukasi, menjadi solusi yang menarik dan efektif dalam pembelajaran matematika. Penelitian ini bertujuan mengembangkan *game* edukasi berbasis Android yang dapat meningkatkan pemahaman operasi aritmatika pada siswa kelas 3–4 SD. *Game* ini dikembangkan menggunakan metode *Game Development Life Cycle* (GDLC) dengan tahapan inisiasi, pra-produksi, produksi, pengujian, beta, dan rilis. *Game* diuji menggunakan *beta testing* dan *User Acceptance Testing* (UAT) serta melalui *pre-test* dan *post-test* pada 100 siswa. Hasil UAT menunjukkan tingkat kelayakan sebesar 83,51%. Hasil *pre-test* dan *post-test* menunjukkan peningkatan pemahaman siswa pada 9 dari 10 soal yang diujikan. *Game* "Math Hero" efektif sebagai media alternatif pembelajaran operasi aritmatika dan layak digunakan untuk meningkatkan motivasi belajar siswa.

**Kata Kunci:** *Game* Edukasi, Matematika, Operasi Aritmatika, GDLC.

## ***ABSTRACT***

### ***DEVELOPMENT OF THE 'MATH HERO' GAME TO IMPROVE ELEMENTARY SCHOOL STUDENTS' UNDERSTANDING OF ARITHMETIC OPERATION CONCEPTS***

***By***

**M. Dzaky Fadhil Athaya**

*Mathematics is often considered a difficult subject for elementary school students to learn. The use of technology, particularly educational games, offers an engaging and effective solution for mathematics learning. This research aims to develop an Android-based educational game, "Math Hero," that can enhance the understanding of arithmetic operations in 3rd–4th grade elementary students. The game was developed using the Game Development Life Cycle (GDLC) method, which includes the stages of initiation, pre-production, production, testing, beta, and release. The game was tested using beta testing and User Acceptance Testing (UAT), as well as through pre-test and post-test involving 100 students. The UAT results showed a feasibility level of 83.51%. Furthermore, the results of the pre-test and post-test indicated an improvement in student understanding on 9 out of 10 questions tested. The "Math Hero" game is proven to be an effective alternative medium for learning arithmetic operations and is suitable for increasing students' learning motivation.*

***Keywords:*** Educational Game, Mathematics, Arithmetic Operations, GDLC