

## ABSTRAK

**Agustini, Kadek Trisna (2024)**, Pengembangan *Game* Edukasi dengan Model *Game Based Learning* untuk Meningkatkan Keterampilan Berpikir Komputasi.

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Kata-kata Kunci: *Game* Edukasi, Keterampilan Berpikir Komputasi, *Game Based Learning*, Pecahan.

Penelitian pengembangan ini didasarkan pada analisis kebutuhan, yang menunjukkan bahwa keterampilan komputasi siswa masih rendah. Penelitian ini bertujuan untuk mengembangkan *game* edukasi menggunakan model pengembangan Plomp, yang ditautkan pada link atau file format *.exe* untuk meningkatkan keterampilan berpikir komputasi siswa. Topik materi yang digunakan adalah materi pecahan yang mengacu pada kesulitan siswa. Subjek penelitian adalah kelas VA dan B SD No 1. Sempidi serta kelas V SD No. 1 Tumbakbayuh. Teknik pengumpulan data meliputi observasi, wawancara, angket LORI untuk uji kelayakan, angket UEQ untuk kepraktisan, soal *pre-test* dan *post-test* untuk keefektifan. Karakteristik *game* edukasi ini mampu mengembangkan kelima indikator berpikir komputasi. *Game* edukasi ini memuat soal-soal cerita yang mampu mendukung indikator dekomposisi masalah, beragam pola penyajian soal pada tiap levelnya mampu mendukung indikator pengenalan pola dan *debugging*, serta kebebasan kreativitas siswa dalam menjawab mampu mendukung indikator abstraksi dan penggunaan algoritma. *Game* edukasi ini memenuhi kriteria valid dengan nilai 4,48 dan digolongkan sebagai media yang sangat layak. Setelah penyempurnaan melalui uji coba terbatas, uji coba lapangan I dan II, *game* edukasi ini sudah memenuhi kriteria praktis dengan hasil keenam aspek pada UEQ yang menunjukkan kriteria 'sangat baik'. Selain itu, hasil *pre-test* dan *post-test* dalam kedua uji coba lapangan menunjukkan bahwa *game* edukasi dengan model *game-based learning* berhasil meningkatkan keterampilan berpikir komputasi, dengan *n-gain score* 0,75 yang memenuhi kriteria efektivitas tinggi.

## ABSTRACT

**Agustini, Kadek Trisna (2024)**, *Development of Educational Games Using Game Based Learning Model to Improve Computational Thinking Skills*

*Thesis, Mathematics Education, Postgraduate Programme, Universitas Pendidikan Ganesha.*

*This master's thesis has been approved and examined by 1<sup>st</sup> supervisor: Prof. Dr. I Nengah Suparta, M.Si. and 2<sup>nd</sup> supervisor: Prof. Dr. I Made Ardana, M.Pd.*

*Keywords: Educational Games, Computational Thinking Skills, Game Based Learning, Fractions.*

*This development research is based on needs analysis which shows that students' computing skills are still low. This research aimed to develop educational games using the Plomp development model, which is linked to a link or .exe format file to improve students' computational thinking skills. The topic of material used in this research is fraction material which have been considered based on the result of the analysis on students' difficulties. The research subjects were classes VA and B of SD No. 1. Sempidi and class V of SD No. 1 Tumbakbayuh. Data collection techniques include observation, interviews, LORI questionnaires for feasibility testing, UEQ questionnaires for practicality, pre-test and post-test questions for effectiveness. The characteristic of this game is that it can develop the five indicators of computational thinking. This educational game contains story questions that can support indicators of problem decomposition, various patterns of problem presentation at each level that are able to support indicators of pattern recognition and debugging, and students' freedom of creativity in answering the questions which is able to support indicators of abstraction and use of algorithms. This educational game gained the valid criteria with a score of 4.48 which is classified as very appropriate media. After refinement through limited trials, field trials I and II, this educational game has met the practical criteria with the results of all six aspects of the UEQ showing 'very good' criteria. In addition, the pre-test and post-test results in both field trials showed that educational games with a game-based learning model were successful in improving computational thinking skills, with an n-gain score of 0.75 which met the criteria for high effectiveness.*