

## ABSTRAK

Arum, Ni Ketut (2026). *Pengembangan Game Edukasi Berbasis Model Pembelajaran ARSELTHK untuk Meningkatkan Pemahaman Konsep Matematika serta Karakter Mandiri dan Bernalar Kritis*. Tesis. Pendidikan Matematika, Program Pascasarjana, Universitas Pendidikan Ganesha.

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Kata – kata kunci : *game edukasi, ARSELTHK, pemahaman konsep matematika, karakter mandiri, karakter bernalar kritis*

Penelitian ini bertujuan untuk mengembangkan *game* edukasi berbasis model pembelajaran *ARSELTHK* untuk meningkatkan pemahaman konsep matematika serta karakter mandiri dan bernalar kritis peserta didik yang valid, praktis, dan efektif serta mendeskripsikan implementasi dan peran *game* edukasi. Penelitian ini dilaksanakan di SMP Negeri 3 Denpasar pada semester ganjil tahun pelajaran 2025/2026. Penelitian ini mengikuti alur penelitian pengembangan desain dengan model Plomp yang terdiri dari tahap studi awal, tahap pengembangan, dan tahap asesmen sumatif. Teknik pengumpulan data yang digunakan, yaitu teknik wawancara, studi dokumentasi, kuisioner/angket, tes, dan observasi. Data yang diperoleh dari kuisioner dan tes dianalisis untuk mengukur kualitas *game* edukasi yang dikembangkan. Hasil penelitian menunjukkan bahwa : 1) *game* edukasi yang dikembangkan memenuhi kualitas valid dengan skor rata – rata 4,53 (sangat valid); 2) *game* edukasi yang dikembangkan telah memenuhi kualitas praktis dengan skor rata – rata 4,47 (sangat praktis); serta 3) *game* edukasi yang dikembangkan memenuhi kualitas efektif dengan skor rata – rata tes pemahaman konsep sebesar 91,80 (sangat baik) serta skor rata – rata observasi karakter mandiri dan bernalar kritis sebesar 3,74 dan 3,78 (membudaya). Berdasarkan temuan tersebut diperoleh *game* edukasi berbasis model pembelajaran *ARSELTHK* yang memenuhi kriteria valid, praktis, dan efektif untuk meningkatkan pemahaman konsep matematika serta karakter mandiri dan bernalar kritis peserta didik. Implementasi pembelajaran, yaitu 1) penggunaan metode STOP, 2) pengenalan karakter positif, 3) membandingkan bilangan bulat, 4) petunjuk siswa dan petunjuk orang tua, 5) kesimpulan, 6) *social emotional learning*, 7) refleksi, serta 8) kuis. Peran *game* edukasi berbasis model pembelajaran *ARSELTHK* mampu meningkatkan pemahaman konsep matematika sejalan dengan teori konstruktivisme sosial, perkembangan kognitif, dan pembelajaran bermakna. Pengintegrasian SEL dan THK berkontribusi pada peningkatan karakter mandiri dan bernalar kritis peserta didik.

## ABSTRACT

Arum, Ni Ketut. *Development of Educational Games Based on the ARSELTHK Learning Model to Improve Understanding of Mathematical Concepts as well as Independent and Critical Thinking Characters*. Thesis. Mathematics Education, Postgraduate Program, Universitas Pendidikan Ganesha.

*This thesis has been approved and examined by Supervisor I : Prof. Dr. Gede Suweken, M.Sc. and Supervisor II : Prof. Dr. I Made Ardana, M.Pd.*

*Keywords : educational game, ARSELTHK, understanding mathematical concepts, independent character, critical thinking character.*

*This study aims to develop an educational game based on the ARSELTHK learning model to improve students' understanding of mathematical concepts and independent and critical reasoning characters that are valid, practical, and effective and to describe the implementation and role of educational games. This study was conducted at SMP Negeri 3 Denpasar in the odd semester of the 2025/2026 academic year. This study follows the design development research flow with the Plomp model which consists of the initial study stage, the development stage, and the summative assessment stage. Data collection techniques used were interviews, documentation studies, questionnaires, tests, and observations. Data obtained from questionnaires and tests were analyzed to measure the quality of the developed educational games. The results of the study show that: 1) the developed educational games meet valid quality with an average score of 4.53 (very valid); 2) the developed educational games have met practical quality with an average score of 4.47 (very practical); and 3) the developed educational game meets effective quality with an average score of 91.80 (very good) on the concept understanding test and an average score of 3.74 and 3.78 (ingrained) on the observation of independent and critical reasoning characters. Based on these findings, an educational game based on the ARSELTHK learning model was obtained that meets the criteria of validity, practicality, and effectiveness in improving students' understanding of mathematical concepts and independent and critical reasoning characters. Learning implementations include 1) the use of the STOP method, 2) the introduction of positive characters, 3) comparing integers, 4) student and parent instructions, 5) conclusions, 6) social emotional learning, 7) reflection, and 8) quizzes. The role of educational games based on the ARSELTHK learning model is able to improve students' understanding of mathematical concepts in line with the theory of social constructivism, cognitive development, and meaningful learning. The integration of SEL and THK contributes to improving students' independent and critical reasoning characters.*