

ABSTRAK

Della Dwi Safera. 2026. Implementation of a Canva-Based Quiz Mathematics Educational Game Using a Contextual Approach to Improve Mathematical Understanding of Statistics among Grade X Vocational High School Students. Undergraduate Thesis. Mathematics Education Study Program, Faculty of Teacher Training and Education, Universitas PGRI Madiun. Advisors: (I) Dr. Sanusi, M.Pd. (II) Dr. Vera Dewi Susanti, M.Pd.

This research was motivated by students' low level of mathematical understanding of statistics, which was attributed to teacher-centered learning processes, limited student involvement in active learning, and the lack of interactive and innovative learning media. These conditions make it difficult for students to understand statistical concepts and apply them to problem-solving. Based on the theory of Contextual Teaching and Learning (CTL), learning that connects subject matter to students' real-life experiences and is supported by engaging learning media can improve conceptual understanding and student engagement. This study aimed to determine the effect of implementing a Canva-based Quiz Mathematics educational game using a contextual approach on the mathematical understanding of Grade X students at SMK Muhammadiyah 1 Ngawi. This study employed a quantitative approach with a Nonequivalent Control Group Design. The research sample consisted of an experimental class and a control class, each comprising 17 students. Data were collected through tests, observations, and documentation. The data were analyzed using descriptive statistics, normality tests, homogeneity tests, an Independent Samples t-test, hypothesis testing, and N-Gain analysis. The results showed that students' mathematical understanding in the experimental class was better than that in the control class. The hypothesis test yielded a significance value of less than 0.05, indicating a significant effect of using the Canva-based Quiz Mathematics educational game with the CTL approach on students' mathematical understanding. The N-Gain analysis indicated that the improvement in students' mathematical understanding was in the moderate category. Therefore, implementing the Canva-based Quiz Mathematics educational game using a contextual approach is effective as a learning medium for improving students' mathematical understanding of statistics.

Keywords: Educational Game, Quiz Mathematics, Canva, Contextual Teaching and Learning, Mathematical Understanding, Statistics.

ABSTRAK

Della Dwi Safera. 2026. *Implementasi Game Edukasi Quiz Mathematics Berbasis Canva dengan Pendekatan Kontekstual untuk Meningkatkan Pemahaman Matematis pada Materi Statistika Kelas X SMK*. Skripsi. Program Studi Pendidikan Matematika, FKIP Universitas PGRI Madiun. Pembimbing (I) Dr. Sanusi, M.Pd. (II) Dr. Vera Dewi Susanti, M.Pd.

Penelitian ini dilatarbelakangi oleh rendahnya pemahaman matematis siswa pada materi statistika yang disebabkan oleh proses pembelajaran yang masih berpusat pada guru, kurang melibatkan siswa secara aktif, serta minimnya penggunaan media pembelajaran yang interaktif dan inovatif. Kondisi tersebut mengakibatkan siswa mengalami kesulitan dalam memahami konsep statistika dan menerapkannya pada penyelesaian masalah. Berdasarkan teori *Contextual Teaching and Learning* (CTL), pembelajaran yang mengaitkan materi dengan pengalaman nyata siswa serta didukung media pembelajaran yang menarik dapat meningkatkan pemahaman konsep dan keaktifan belajar. Penelitian ini bertujuan untuk mengetahui pengaruh implementasi game edukasi *Quiz Mathematics* berbasis Canva dengan pendekatan kontekstual terhadap pemahaman matematis siswa kelas X SMK Muhammadiyah 1 Ngawi. Penelitian menggunakan pendekatan kuantitatif dengan desain *Nonequivalent Control Group Design*. Sampel penelitian terdiri atas kelas eksperimen dan kelas kontrol yang masing-masing berjumlah 17 siswa. Pengumpulan data dilakukan melalui tes, observasi, dan dokumentasi. Data dianalisis menggunakan statistik deskriptif, uji normalitas, uji homogenitas, uji *Independent Sample t-test*, uji hipotesis, dan analisis N-Gain. Hasil penelitian menunjukkan bahwa pemahaman matematis siswa pada kelas eksperimen lebih baik dibandingkan kelas kontrol. Uji hipotesis menunjukkan nilai signifikansi kurang dari 0,05 sehingga terdapat pengaruh yang signifikan dari penggunaan game edukasi *Quiz Mathematics* berbasis Canva dengan pendekatan CTL terhadap pemahaman matematis siswa. Analisis N-Gain menunjukkan bahwa peningkatan pemahaman matematis siswa berada pada kategori sedang. Dengan demikian, implementasi game edukasi *Quiz Mathematics* berbasis Canva dengan pendekatan kontekstual efektif digunakan sebagai media pembelajaran untuk meningkatkan pemahaman matematis siswa pada materi statistika.

Kata kunci: Game Edukasi, *Quiz Mathematics*, *Canva*, *Contextual Teaching and Learning*, Pemahaman Matematis, Statistika.