

Abstrak

Wina Rizkana : Pengaruh Penggunaan Media *Augmented Reality* Dan *Virtual Reality* Terhadap Kemampuan Spasial Matematis Siswa. Program Studi Pendidikan Matematika FKIP Universitas Malikussaleh, 2026.

Kemampuan spasial matematis merupakan salah satu kompetensi yang penting dimiliki siswa dalam memahami konsep geometri, memvisualisasikan objek, serta menyelesaikan permasalahan matematika. Siswa membutuhkan pembelajaran yang bisa memberikan tambilan nyata atau bentuk langsung untuk mencapai kompetensi tersebut, salah satu upaya mengatasi permasalahan tersebut adalah melalui media pembelajaran berbasis *Augmented Reality* (AR) dan *Virtual Reality* (VR). Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan media *Augmented Reality* dan *Virtual Reality* terhadap kemampuan spasial matematis siswa. Penelitian menggunakan pendekatan kuantitatif dengan metode kuasi eksperimen dan desain *Nonequivalent Control Group Design*. Sampel penelitian ditentukan menggunakan teknik *purposive sampling*, yaitu siswa kelas XI-5 sebagai kelas eksperimen dan XI-2 sebagai kelas kontrol di MAN 5 Bireuen. Data dikumpulkan melalui tes kemampuan spasial matematis berupa *pretest* dan *posttest* serta didukung dengan lembar observasi. Analisis data dilakukan menggunakan uji normalitas *Shapiro-Wilk*, uji homogenitas *Levene's Test*, dan *Independent Samples t-test*. Hasil penelitian menunjukkan bahwa kedua kelompok memiliki data yang berdistribusi normal dan varians yang homogen. Pengujian hipotesis data dilakukan melalui uji normalitas *Shapiro-Wilk*, uji homogenitas *Levene's Test*, dan uji hipotesis menggunakan *Independent Samples t-Test*. Hasil uji normalitas menunjukkan bahwa data kelas kontrol ($p = 0,417$) dan kelas eksperimen ($p = 0,145$) berdistribusi normal. Selanjutnya, hasil uji homogenitas memperoleh nilai signifikansi sebesar 0,100 yang menunjukkan bahwa kedua kelompok memiliki varians yang homogen. Pengujian hipotesis menggunakan *Independent Samples t-Test* menghasilkan nilai signifikansi sebesar $0,000 < 0,05$. Hasil tersebut menunjukkan terdapat pengaruh yang signifikan penggunaan media *Augmented Reality* (AR) dan *Virtual Reality* (VR) terhadap kemampuan spasial matematis siswa.

Kata kunci: *Augmented Reality (AR); Virtual Reality (VR); Kemampuan Spasial.*

Abstract

Wina Rizkana: *The Effect Of Using Augmented Reality And Virtual Reality On Students' Mathematical Spatial Abilities. Mathematics Education Program, Faculty Of Teacher Training And Education, Malikussaleh University, 2026.*

Mathematical-spatial ability is one of the key competencies students need to understand geometric concepts, visualize objects, and solve mathematical problems. Students require learning experiences that provide tangible representations or direct visualizations to achieve these competencies; one approach to addressing this issue is through learning media based on Augmented Reality (AR) and Virtual Reality (VR). This study aims to determine the effect of using Augmented Reality and Virtual Reality media on students' mathematical spatial abilities. The study employs a quantitative approach using a quasi-experimental method and a Nonequivalent Control Group Design. The research sample was selected using purposive sampling, specifically students from class XI-5 as the experimental group and class XI-2 as the control group at MAN 5 Bireuen. Data were collected through mathematical spatial ability tests in the form of pretests and posttests, supplemented by observation sheets. Data analysis was conducted using the Shapiro-Wilk normality test, Levene's test for homogeneity of variances, and the independent samples t-test. The results showed that both groups had normally distributed data and homogeneous variances. Hypothesis testing was conducted using the Shapiro-Wilk normality test, Levene's test for homogeneity of variances, and an independent samples t-test. The results of the normality test indicated that the data from the control group ($p = 0.417$) and the experimental group ($p = 0.145$) were normally distributed. Furthermore, the results of the homogeneity test yielded a significance value of 0.100, indicating that the two groups had homogeneous variances. Hypothesis testing using the independent samples t-test produced a significance value of $0.000 < 0.05$. These results indicate that the use of Augmented Reality (AR) and Virtual Reality (VR) media has a significant effect on students' mathematical spatial abilities.

Keywords: Augmented Reality (AR); Virtual Reality (VR); Spatial Ability