

## ABSTRAK

**Fernando Ganda Parulian Panggabean, NIM 4183351010 (2022). Pengaruh Model Pembelajaran Sains Teknologi Masyarakat (STM) Berbantuan Video Animasi terhadap Kemampuan Berpikir Kritis Peserta Didik Materi Hukum Newton di SMP Negeri 6 Percut Sei Tuan**

Penelitian ini bertujuan untuk mengetahui apakah peningkatan kemampuan berpikir kritis siswa melalui model pembelajaran Sains Teknologi Masyarakat (STM) berbantuan video animasi pada materi hukum newton memenuhi kriteria tinggi dan aspek berpikir kritis apakah yang berkembang melalui model pembelajaran Sains Teknologi Masyarakat (STM) berbantuan video animasi pada materi hukum newton. Jenis penelitian ini menggunakan metode *Pre-Experimental Design* dengan desain penelitian *One group pretest-posttest design*. Sampel dalam penelitian ini terdiri dari satu kelas yang berjumlah 30 siswa yaitu kelas VIII-3 SMP Negeri 6 Percut Sei Tuan yang dipilih secara *random sampling*. Instrumen yang digunakan berupa tes kemampuan berpikir kritis yang telah divalidasi dalam bentuk pilihan berganda sebanyak 25 soal dengan memenuhi syarat validasi isi yaitu 0,379 sampai 0,666 dan memenuhi syarat reliabilitas sebesar 0,823. Dari hasil penelitian diperoleh rata-rata *pretest* 49 dan *posttest* sebesar 85,6 yang menyatakan data bersifat homogen. Pada uji normalitas diperoleh nilai Chi-Kuadrat *pretest* sebesar 29,646 dan *posttest* sebesar 12,763 yang menyatakan data berdistribusi normal. Berdasarkan hasil analisis uji hipotesis (*one sample t-test*) diperoleh  $t_{hitung} > t_{tabel}$  yaitu  $2,089 > 1,699$ . Pada pengujian gain ternormalisasi diperoleh n-gain sebesar 0,725 (72,5%) yang menyatakan bahwa kemampuan berpikir kritis siswa yang dibelajarkan dengan menggunakan model pembelajaran Sains Teknologi Masyarakat (STM) berbantuan video animasi pada materi hukum newton memenuhi kriteria tinggi. Hasil penelitian menunjukkan bahwa kemampuan berpikir kritis siswa untuk aspek menjawab pertanyaan sebesar 72,83%, aspek menggunakan prosedur yang telah ditetapkan sebesar 50,16%, aspek mengidentifikasi atau merumuskan kriteria untuk memutuskan jawaban yang mungkin sebesar 66,67%, aspek mencari persamaan dan perbedaan sebesar 83,33%, aspek mendeduksi dan mempertimbangkan hasil deduksi menginterpretasi kenyataan sebesar 78,33%, aspek menganalisis pendapat melihat persamaan dan perbedaan sebesar 20%, dan aspek mengidentifikasi suatu pendapat atau asumsi sebesar 40,33%. Sehingga dapat disimpulkan bahwa aspek berpikir kritis yang paling berkembang adalah aspek mencari persamaan dan perbedaan.

**Kata kunci:** Model pembelajaran sains teknologi masyarakat, kemampuan berpikir kritis, video animasi, hukum newton

## ABSTRACT

**Fernando Ganda Parulian Panggabean, NIM 4183351010 (2022). The Effect of Video Animation-Assisted Science Technology Society (STM) Learning Model on Students' Critical Thinking Ability in Newton's Law Material at SMP Negeri 6 Percut Sei Tuan**

This study aims to determine whether the improvement of students' critical thinking skills through the Social Technology Science (STS) learning model assisted by animated videos on Newton's law material meets the high criteria and what aspects of critical thinking are developed through the Social Technology Science (STS) learning model assisted by animated videos in newton's law material. This type of research uses the Pre-Experimental Design method with a research design of One group pretest-posttest design. The sample in this study consisted of one class obtained by 30 students, namely class VIII-3 SMP Negeri 6 Percut Sei Tuan which was selected by random sampling. The instrument used is an ability test for critical thinking which has been validated in the form of multiple choice as many as 25 questions by fulfilling the validation requirements, namely 0.379 to 0.666 and fulfilling the reliability requirements of 0.823. From the research results obtained an average of 49 pretest and posttest of 85.6 which states the data is homogeneous. In the normality test, the Chi-Square value of the pretest was 29,646 and the posttest was 12,763 which stated that the data were normally distributed. Based on the analysis of the hypothesis test (one sample t-test) obtained  $t_{\text{count}} > t_{\text{table}}$  that is  $2,089 > 1,699$ . In the normalized gain test, an n-gain of 0.725 (72.5%) was obtained which stated that the critical thinking skills of students who were taught using the Social Technology Science (STS) learning model assisted by animated videos on Newton's law material met the high criteria. The results showed that students' critical thinking ability to answer questions was 72.83%, aspects of using procedures that had been 50.16%, aspects of determining or formulating criteria to decide possible answers were 66.67%, aspects of looking for similarities and the difference is 83.33%, the aspect of deduction and considering the results of the deduction interpreting reality is 78.33%, the aspect of analyzing opinions and differences is 20%, and the aspect of identifying an opinion or assumption is 40.33%. So it can be concluded that the most developed aspect of critical thinking is the aspect of looking for similarities and differences..

**Keywords:** Science technology community learning models, critical thinking skills, animated videos, Newton's law