

**PENGARUH PEMBELAJARAN
SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS (STEM)
TERHADAP KEMAMPUAN NUMERASI PESERTA DIDIK PADA
MATERI SISTEM PERNAPASAN**

SKRIPSI

*disusun untuk memenuhi sebagian syarat untuk
memeroleh gelar Sarjana Pendidikan Biologi*



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BANDUNG
2022**

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PENGARUH PEMBELAJARAN *SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS* (STEM) TERHADAP KEMAMPUAN NUMERASI PESERTA DIDIK PADA MATERI SISTEM PERNAPASAN

ABSTRAK

Pembelajaran dikelas Biologi diharapkan dapat membantu membangun kemampuan numerasi. Pembelajaran *Science Technology Engineering Mathematics* (STEM) dimana di dalamnya dibangun oleh komponen matematik diharapkan dapat membantu meningkatkan kemampuan numerasi. Tujuan dari penelitian yang dilakukan adalah menganalisis pengaruh pembelajaran STEM terhadap kemampuan numerasi peserta didik. Pembelajaran STEM dilakukan melalui kegiatan pembuatan prototipe alat sterilisasi UV pada satu kelas penelitian yang terbagi menjadi beberapa kelompok kecil, observasi untuk pengambilan data dilakukan sebelum, saat, dan setelah pembelajaran dilakukan. Pengaruh pembelajaran diuji melalui uji statistik *Paired sample t test* dan uji *NGain*. Pengambilan data dilakukan pada salah satu kelas XI IPA di salah satu SMA Negeri di Bandung dengan partisipan sebanyak 21 peserta didik. Instumen yang digunakan berupa tes tulis kemampuan numerasi dan pengetahuan konsep sistem pernapasan, lembar observasi dan angket respons peserta didik. Berdasarkan penelitian, hasil yang didapat adalah pembelajaran STEM yang dilakukan berpengaruh terhadap kemampuan numerasi peserta didik, dengan hasil signifikan ($t(21) = -5,87, p = 0,00$) dan peningkatan sedang ($NGain = 0,46$). Pembelajaran STEM pada materi sistem pernapasan dengan kegiatan pembuatan prototipe alat sterilisasi UV dapat meningkatkan kemampuan numerasi peserta didik. Hasil yang didapat ini sesuai dengan tujuan penelitian yang dilakukan.

Kata kunci : Numerasi, Pembelajaran STEM, Matematik, Prototipe Alat Sterilisasi UV

**THE EFFECT OF LEARNING SCIENCE TECHNOLOGY ENGINEERING
MATHEMATICS (STEM) ON STUDENT NUMERATION ABILITY IN THE
RESPIRATORY SYSTEM CHAPTER**

ABSTRACT

Learning in Biology class is expected to help build numeracy skills. Science Technology Engineering Mathematics (STEM) learning which is built by mathematical components is expected to help improve numeracy skills. The purposed of this research is to analyze the effect of STEM learning on students' numeracy skills. STEM learning is carried out through the activity of making prototypes of UV sterilizers in one research class which is divided into several small groups, observations for data collection are carried out before, during, and after learning is carried out. The effect of learning was tested through the Paired sample t test and the NGain test. Data collection was carried out in one of the XI IPA classes in one of the senior high schools in Bandung with 21 students as participants. The instruments used were written tests of numeracy skills and knowledge of respiratory system concepts, observation sheets and student response questionnaires. Based on the research, the results obtained are that STEM learning has an effect on students' numeracy skills, with significant results ($t(21) = -5.87$, $p = 0.00$) and moderate increase (NGain = 0.46). STEM learning on respiratory system materials by making prototypes of UV sterilizers can improve students' numeracy skills. The results obtained are in accordance with the objectives of the research conducted.

**Keywords : Numeration, STEM Learning, Mathematics, UV Sterilizer
Prototipe**

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