

**EFEKTIVITAS MODEL *PROJECT BASED LEARNING*
BERORIENTASI *SCIENCE, TECHNOLOGY, ENGINEERING,*
AND MATHEMATICS TERHADAP KOMPETENSI
PENGETAHUAN IPA SD**

Oleh

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ABSTRAK

Literasi sains siswa masih dikategorikan rendah. Salah satu penyebabnya adalah siswa dihadapkan dengan menghafal materi – materi Ilmu Pengetahuan Alam (IPA) yang berdampak pada rendahnya pemahaman konsep IPA. Penelitian ini bertujuan untuk mengkaji efektivitas model *Project Based Learning* Berorientasi *Science, Technology, Engineering and Mathematics* (STEM) terhadap kompetensi pengetahuan IPA SD. Penelitian ini berjenis *Quasi eksperimen* dengan menggunakan *Nonequivalent Control Group Design*. Populasi penelitian adalah kelas V SD Gugus Ki Hajar Dewantara, yang berjumlah 209 siswa. Penelitian ini menggunakan dua kelompok sampel yaitu kelompok eksperimen dan kelompok kontrol. Sampel penelitian didapatkan melalui teknik *random sampling* dan telah melewati uji kesetaraan. Kelompok eksperimen dalam penelitian ini berjumlah 33 siswa, dan kelompok kontrol berjumlah 30 siswa. Data dikumpulkan dengan pemberian tes objektif pilihan ganda selanjutnya dianalisis menggunakan uji-*t polled varians*. Hasil analisis data menunjukkan $t_{hitung} = 2.237 > t_{tabel} = 2.000$, dengan taraf signifikansi 5% dan $dk = 61$ sehingga H_0 ditolak. Artinya terdapat perbedaan kompetensi pengetahuan IPA siswa yang dibelajarkan melalui model *project based learning* berorientasi STEM dan siswa yang dibelajarkan melalui pembelajaran konvensional. Hal ini berarti model *project based learning* berorientasi STEM berpengaruh terhadap kompetensi pengetahuan IPA siswa. Pembelajaran melalui model *project based learning* berorientasi STEM dapat membuat siswa lebih termotivasi belajar sehingga mempermudah dalam memahami materi-materi IPA.

Kata-kata kunci : Efektivitas, PjBL, STEM, kompetensi pengetahuan IPA.

Abstract

Student scientific literacy is still categorized as low. One of the reasons is students are faced with memorizing natural science (IPA) materials that have an impact on the poor understanding of science concepts. This study aims to examine the effectiveness of the Science, Technology, Engineering and Mathematics (STEM) Oriented Project Based Learning model for elementary science knowledge competencies. This research is a quasi-experimental type using Nonequivalent Control Group Design. The study population was the fifth grade elementary school Ki Hajar Dewantara Elementary School, which numbered 209 students. This study uses two sample groups namely the experimental group and the control group. The research sample was obtained through random sampling techniques and had passed the equality test. The experimental group in this study amounted to 33 students, and the control group numbered 30 students. Data were collected by giving multiple choice objective tests and then analyzed using pooled variance t-test. The results of data analysis showed that $t = 2,237 > t \text{ table} = 2,000$, with a significance level of 5% and $dk = 61$ so H_0 was rejected. This means that there are differences in the competencies of students' science knowledge that are taught through STEM-oriented project based learning models and students who are taught through conventional learning. This means that STEM-oriented project based learning models influence the competence of students' science knowledge. Learning through the STEM oriented project based learning model can make students more motivated to learn so that it makes it easier to understand science materials.

Keywords: *Effectiveness, PjBL, STEM, science knowledge competence.*

