

**PENGEMBANGAN LEMBAR KERJA PESERTA DIDIK DENGAN
PENDEKATAN *STEM* (*SCIENCE, TECHNOLOGY, ENGINEERING,
MATHEMATICS*) UNTUK MENINGKATKAN LITERASI
SAINS SISWA PADA MATERI VIRUS**

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Abstrak

Pada abad 21 ilmu pengetahuan dan teknologi berkembang begitu pesat. Siswa dituntut dapat menguasai berbagai keterampilan dan memiliki literasi sains yang tinggi agar dapat bersaing secara global. Dalam proses kegiatan belajar mengajar, pendekatan pembelajaran dan bahan ajar harus sesuai agar tujuan pembelajaran tercapai. Maka penelitian ini bertujuan untuk memperoleh LKPD dengan Pendekatan *Science, Technology, Engeneering and Mathematics* (*STEM*) yang layak dan efektif digunakan untuk meningkatkan literasi sains siswa kelas X IPA SMA semester I. Penelitian ini menggunakan metode penelitian *research and development* dengan model *ADDIE* yang terdiri dari lima tahap yaitu analisis, desain, pengembangan, implementasi, dan evaluasi. Hasil penelitian diperoleh rata-rata persentase penilaian oleh ahli materi sebesar 89,5%, ahli pendidikan sebesar 92,5%, guru biologi sebesar 96,35%, dan persentase tanggapan siswa pada uji coba lapangan sebesar 90,375% dengan kategori “Baik. Berdasarkan hasil uji efektivitas, uji *Paired T Test* diperoleh $t_{hitung} > t_{tabel} = 5,372 > 0,681$, maka dinyatakan H_0 ditolak (secara signifikan skor *postest* lebih tinggi dari skor *pretest*). Pada Uji *Independent T Test* diperoleh $0,001 < 0,05$ maka H_0 ditolak (terdapat perbedaan rata-rata nilai yang signifikan antara kelas eksperimen dan kelas kontrol). Produk akhir LKPD berdasarkan tingkat kelayakan dapat dikategorikan “Sangat Layak” sebagai bahan pendukung pembelajaran biologi dan efektif digunakan untuk meningkatkan literasi sains siswa khususnya pada materi virus. Penelitian ini diharapkan dapat meningkatkan kualitas pembelajaran sains dan ilmu pengetahuan serta memberikan sumbangan pemikiran dan sebagai referensi dalam meningkatkan kreativitas dalam melakukan inovasi pembuatan bahan ajar.

Kata Kunci: *Pengembangan, LKPD, STEM (Science, Technology, Engineering, Mathematics), Literasi sains, Virus.*

**DEVELOPMENT OF STUDENTS WORK SHEET APPROACH TO STEM
(SCIENCE, TECHNOLOGY, ENGINEERING, MATHEMATICS)
TO IMPROVE SCIENCE LITERACY STUDENTS
IN VIRUS MATERIALS**

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Abstract

In the 21st century science and technology developed so rapidly. Students are required to be able to master various skills and have high scientific literacy in order to compete globally. In the process of teaching and learning activities, learning approaches and teaching materials must be appropriate so that learning objectives are achieved. So this study aims to obtain a LKPD with a decent and effective Science, Technology, Engineering and Mathematics (STEM) Approach used to improve scientific literacy for high school science grade X students in the first semester. This study uses research and development research methods with ADDIE model consisting of five stages, namely analysis, design, development, implementation and evaluation. The results of the study showed that the average percentage of assessment by material experts was 89.5%, education experts were 92.5%, biology teachers were 96.35%, and the percentage of students' responses in the field trials was 90.375% with the category "Good. Based on the results of the effectiveness test, the Paired T Test was obtained $t_{count} > t_{table} = 5.372 > 0.681$, then H_0 was rejected (significantly the posttest score was higher than the pretest score). In the Independent T Test Test obtained $0.001 < 0.05$ then H_0 is rejected (there are differences in the mean values that are significant between the experimental class and the control class). LKPD final products based on the level of feasibility can be categorized as "Very Eligible" as a supporting material for biology learning and effectively used to improve students' scientific literacy, especially on viral material. This research is expected to improve the quality of learning science and science and contribute ideas and as a reference in enhancing creativity in innovating the making of teaching materials.

Keywords: Development, LKPD, STEM (Science, Technology, Engineering, Mathematics), Science Literacy, Viruses.