ABSTRAK

Sri Fitri Solihah : Proyek Pembuatan Es Krim Kefir Berbahan Kedelai (*Glycine soya*) pada Materi Bioteknologi untuk Meningkatkan Literasi Halal dan Kreativitas Siswa

Pembelajaran IPA abad ke-21 menekankan penguasaan konsep dan peneraan pengetahuan ilmiah. Kemampuan tersebut diperlukan untuk menyelesaikan berbagai permasalahan kontekstual. Pembelajaran bioteknologi masih menghadapi berbagai kendala. Kendala tersebut mencakup rendahnya pemahaman konsep fermentasi dan keterbatasan literasi halal. Pengembangan kreativitas siswa belum berlangsung secara optimal. Penelitan ini bertujuan menganalisis penerapan PjBL-STREAM pada materi bioteknologi. Pembelajaran dilaksanakan melalui proyek pembuatan es krim kefir soya. Penelitian berfokus pada peningkatkan literasi halal dan kreativitas siswa. Penelitian ini menggunakan motode kuantitatif dengan desain *quasi experiment non-equivalent control group design*. Data diperoleh melalui observasi keterlaksanaan pembelajaran, tes literasi halal dan lembar observasi kreativitas berdasarkan indikator Besemer dan Treffinger yaitu *Novelty, Resolution, Elaboration and Synthesis*. Data dianalisis menggunakan *N-Gain* dan uji *Mann-Whitney U* karena data tidak berdistribusi normal. Hasil penelitian menunjukkan bahwa keterlaksanaan pembelajaran PjBL-STREAM berada pada kategori sangat baik dengan aktivitas guru sebesar 93,2% dan siswa sebesar 91,64%. Nilai *N-Gain* literasi halal kelas eksperimen sebesar 0,7290 (tinggi) sedangkan kelas control sebesar 0,3869 (sedang). Uji *Mann-Whitney U* menunjukkan signifikansi 0,000 ≤ 0,05. Kreativitas siswa memperoleh rata-rata 77,80% dengan kategori kreatif. Dengan demikian, PjBL-STREAM melalui proyek es krim kefir soya dapat meningkatkan literasi halal dan kreativitas siswa.

Kata Kunci : PjBL-STREAM, es krim kefir soya, bioteknologi, literasi halal, kreativitas

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ABSTRACT

Sri Fitri Solihah : ***A Project on Making Soybean (Glycine soya) Ice Cream in Biotechnology Learning to Enhance Students' Halal Literacy and Creativity***

Twenty-first-century science education emphasizes conceptual understanding and the application of scientific knowledge. These competencies are essential for addressing various contextual problems. However, biotechnology education continues to face several challenges. These challenges include limited understanding of fermentation concepts and inadequate halal literacy. Furthermore, students' creativity has not been optimally developed. This study aims to analyze PjBL-STREAM implementation in biotechnology learning. Learning activities involve a soybean kefir ice cream production project. This study focuses on enhancing students' halal literacy and creativity. This study uses a quantitative method with a quasi experiment non-equivalent control group design. Data was obtained through observation of learning implementation, halal literacy tests and creativity observation sheets based on Besemer and Treffinger indicators, namely Novelty, Resolution, Elaboration and Synthesis. The data were analyzed using N-Gain and the Mann-Whitney U test because the data were not normally distributed. The results showed that the implementation of PjBL-STREAM learning was in the very good category with teacher activity of 93.2% and students of 91.64%. The N-Gain value of halal literacy in the experimental class was 0.7290 (high) while the control class was 0.3869 (medium). The Mann-Whitney U test showed a significance of 0.000 ≤ 0.05. Students' creativity obtained an average of 77.80% in the creative category. Thus, PjBL-STREAM through the soy kefir ice cream project can increase halal literacy and student creativity.

Keywords : *PjBL-STREAM, soy kefir ice cream, biotechnology, halal literacy, creativity*

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