

Fostering Fifth Graders' Scientific Creativity Through Problem-Based Learning

Abstract

This research aims to determine whether Problem-Based Learning (PBL) helps in fostering scientific creativity among fifth graders. Students' scientific creativity (SC) was investigated in the product dimensions of (a) solving scientific problems, (b) understanding scientific phenomena, (c) advancement in scientific knowledge, and (d) improvisation skills with a technical product. A pre-test and post-test single group experimental design was employed. Pre-test measures on SC were administered to 232 fifth graders. Students participated in PBL hands-on activities that required solving open-ended problems. After these were completed, post-test measures on SC were assessed. Students' reactions to the PBL experience were also recorded. The results of paired sample t-tests showed significant differences in all product dimensions of SC, except in the understanding of scientific phenomena. Further analysis found significant differences among the creativity traits of fluency, flexibility and originality in each product dimension of SC, except in the originality in the advances of scientific knowledge. Students felt that the PBL activities were easy, fun, and interesting as well as a practical way of gaining and advancing science knowledge. Students also found their participation in sharing ideas in cooperative learning groups inspired them to be more creative. This research suggests that the PBL activities have a positive impact in fostering student's SC in science lessons.