

Design, development and evaluation of a problem-based with cooperative module on scientific creativity of pre-schoolers

ABSTRACT

The purpose of this research was to design and develop a teaching and learning module using Problem-Based Learning and Cooperative Learning (PBLCL) and evaluate its effects on scientific creativity of pre-schoolers. The module was developed using the ADDIE instructional design model which included five phases: Analysis, Design, Development, Implementation, and Evaluation. Formative evaluation was conducted to determine the reliability, content validity, pedagogical usability and pre-schoolers' acceptability of the module, which involved five subject matter experts, 10 pre-school teachers, and 30 six-year-old pre-schoolers. The results of formative evaluation indicated an acceptable reliability, good content validity, high acceptability among the pre-schoolers, and high level of pedagogical usability. Finally, a pre- and post-test non-equivalent control group quasi experiment design was employed to determine the effects of the PBL-CL module. A total of 144 six-year-old pre-schoolers from three pre-schools were randomly assigned to PBL-CL group (n=72) and control group (n=72). The finding of Paired Sample T-test and Independent T-test established the effects of the PBL-CL module and would therefore represent a reliable, credible, and effective teaching and learning module for fostering scientific creativity among pre-schoolers.