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Exploration the Skillsof Teachers: Implementation Technological Pedagogical Content Knowledge

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Abstract

Technological pedagogical content knowledge (TPACK) is urgently needed by science teachers in schools in the 21st century. This study aims to describe the effectiveness of teachers in applying the TPACK model. Regarding effectiveness, there is a statistically significant increase in alpha 0.05, which is the average score of teacher skills for classes A and B; the average normalised gain (n-gain) score for minimum teacher skills is in the medium category; statistically alpha 0.05 score n-gain skills of teachers of classes A and B; the minimum effect size is in the medium category. The research sample consisted of 70 junior high school natural science teachers, each class with 35 teachers. The collected data were analysed using gained sample t-test, n-gain calculation and effect size. The results showed that the increase in teacher skill scores was significant; the average n-gain score of teachers' skills was in the medium category; the average score of the average n-gain of teachers' skills was not different between class A and B; and the effect size is in the moderate effect category. The conclusion of this study is that teacher professional education programme activities are effective in implementing the TPACK model. The TPACK model can improve the skills of teachers' higher-order thinking skills in teaching science in schools.

Keywords: Science, teacher, technological, pedagogical, content knowledge

1. Introduction

1.1. Conceptual or theoretical framework

The Teacher Education Programme in Position is a professional education programme, with level 7 in the Indonesian National Qualifications Framework. The programme is held after the undergraduate or applied undergraduate programme, which demands different competency

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