Teacher Professional Development and Its Relation with Pedagogical Knowledge Content

Prof. Dr. Andrés Bernal-Ballén, Grace-Judith Vesga-Bravo; Martha-Andrea Merchán-Merchán; Ronald-Andrés González-Reyes

Universidad Antonio Nariño, Colombia

Abstract

In the last decades, teacher professional development (TPD) has emerged as an attractive topic for the educational scientific community because it defines how educators teach and how they develop professionally themselves. Indeed, recent publications have evidenced that teachers whose disciplinary, didactic, and pedagogical teacher development is better might assist their students in the construction (not transmission) of scientific and mathematical concepts. For that reason, the current research is devoted to analyze the impact of the implementation of a teaching and learning strategy based on the pedagogical content knowledge (PCK) for training teachers of natural sciences and mathematics. Four instruments were used. Three related to proportionality concept (adapted from previous works), and the other about PCK which was validated for the current research). The strategy consisted of 16 lessons in which the Refined Consensus Model (RCM) of the PCK was studied. During the process, training teachers were oriented through all the components of the pedagogical knowledge content and the preliminary results indicated a new approach to face planning, teaching, and assessing proportionality concept.

Keywords: math, proportionality, sciences, teacher training, teaching