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Technological Pedagogical Content Knowledge on Mathematical Problem Solving and the Instructional Effectiveness of Students in the Master's Level

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ABSTRACT

Literacy in the use of technology in the classroom is becoming a trend among educators. One aspect that makes it challenging among Mathematics teachers is to set the classroom activities more efficient through technological integration. This study explored the assessment of the technological pedagogical content knowledge and how it affects the instructional effectiveness among Mathematics teachers. The descriptive and correlational research designs were used by 42 students in the Master's level of Laguna State Polytechnic University, the academic year 2018-2019, who work as secondary teachers in public and private institutions through a standardized research instrument. As revealed in the study, most respondents have a high level of technological pedagogical content knowledge. It is also evident that they effectively deliver instruction considering the lesson organization, mastery of the subject matter, subject interaction, managing collaborative learning activities, efficient lesson implementation, instructional materials, monitoring student responses, and very evident lesson presentation. Moreover, there is a significant positive relationship between technological pedagogical content knowledge and instructional effectiveness. Furthermore, pedagogical effectiveness serves as a predictor to ensure the instructional effectiveness of the mathematics teachers. If teachers are equipped with a high level of pedagogical knowledge to use different approaches and methods, it will support them to perform more effectively in the delivery of instruction.

Keywords: technological knowledge, pedagogical knowledge, content knowledge, instructional effectiveness