The Role of Motivational Beliefs and Self-Regulated Learning Strategies in The Prediction of Mathematics Teacher Candidates' Technological Pedagogical And Content Knowledge (TPACK) Perceptions

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Abstract : Information technologies have lead to changes in the areas of communication, learning, and teaching. Besides offering many opportunities to the learners, these technologies have changed the teaching methods and beliefs of teachers. What the Technological Pedagogical Content Knowledge (TPACK) means to the teachers is considerably important to integrate technology successfully into teaching processes. It is necessary to understand how to plan and apply teacher training programs in order to balance students' pedagogical and technological knowledge. Because of many inefficient teacher training programs, teachers have difficulties in relating technology, pedagogy and content knowledge each other. While providing an efficient training supported with technology, understanding the three main components (technology, pedagogy and content knowledge) and their relationship are very crucial. The purpose of this study is to determine whether motivational beliefs and self-regulated learning strategies are significant predictors of mathematics teacher candidates' TPACK perceptions. A hundred seventy five Turkish mathematics teachers candidates responded to the Motivated Strategies for Learning Questionnaire (MSLQ) and the Technological Pedagogical And Content Knowledge (TPACK) Scale. Of the group, 129 (73.7%) were women and 46 (26.3%) were men. Participants' ages ranged from 20 to 31 years with a mean of 23.04 years (SD = 2.001). In this study, a multiple linear regression analysis was used. In multiple linear regression analysis, the relationship between the predictor variables, mathematics teacher candidates' motivational beliefs, and self-regulated learning strategies, and the dependent variable, TPACK perceptions, were tested. It was determined that self-efficacy for learning and performance and intrinsic goal orientation are significant predictors of mathematics teacher candidates' TPACK perceptions. Additionally, mathematics teacher candidates' critical thinking, metacognitive self-regulation, organisation, time and study environment management, and help-seeking were found to be significant predictors for their TPACK perceptions.

Keywords : candidate mathematics teachers, motivational beliefs, self-regulated learning strategies, technological and pedagogical knowledge, content knowledge