

INVESTIGATING THE ROLE OF PROBLEM-SOLVING SKILLS AMONG UNIVERSITY STUDENTS DURING THE COVID-19 PANDEMIC

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Problem-solving, especially complex problem-solving, is considered one of the most important cognitive skills for successful learning. The COVID-19 pandemic changed teaching and learning remarkably, and brought many challenges to students' daily learning activities. In this study, we aimed to analyze how students' problem-solving skills and other school-related factors (such as teacher support and learning strategy) influenced their learning success during remote learning due to the pandemic. Participants were students admitted to a large Hungarian university and starting their studies in two different periods: in 2020 after three months of remote learning ($n=1516$), and in 2021 after nine months of remote learning ($n=1718$). In addition to ascertaining students' problem-solving skills (20 items) in uncertain situations through a self-report questionnaire, we mapped their learning strategies (distinguishing elaboration, memorization, and control strategies), learning activities, and teacher support during remote learning due to COVID-19. The test and the questionnaire were administered online via the eDia assessment platform (Molnár & Csapó, 2019). The reliability of the problem-solving tests proved to be good ($\alpha=.88$) in both years. We built two structural equation models based on the 2020 and 2021 data. Both of the structural models showed good model fits (2020: CFI: .931; TLI: .952; RMSEA: .045; 2021: CFI: .934; TLI: .953; RMSEA: .046), and indicated that better problem-solvers felt that it had been less difficult to prepare for the school-leaving exam (2020: $\beta=.126$, $p<.01$; 2021: $\beta=.082$, $p<.05$), and they experienced fewer problems in using ICT tools during their studies (2020: $\beta=.130$, $p<.01$; 2021: $\beta=.162$, $p<.01$). Moreover, the 2020 model showed that good problem-solvers were better in understanding the curriculum online as thoroughly as in traditional face-to-face classes ($\beta=.147$, $p<.01$). This effect was not confirmed in the 2021 model after nine months of remote learning. Teacher support and the use of effective learning strategies showed various positive effects on students' learning during the pandemic in both models. To sum up, students' problem-solving skills played a key role during the process of adapting to new ways of learning. Establishing explicit training in problem-solving is thus recommended to help students overcome current challenges.

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