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Students' Statistical Reasoning and Attitudes towards Statistics in Blended Learning, E-Learning and On-Campus Learning

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Abstract : The present study focused on students' statistical reasoning related to Null Hypothesis Statistical Testing and p-values. Its objective was to test the hypothesis that neither the place (classroom, at a distance, online) nor the medium that actually supports the learning (ICT, internet, books) has an effect on understanding of statistical concepts. In addition, it was expected that students' attitudes towards statistics would not predict understanding of statistical concepts. The sample consisted of 385 undergraduate and postgraduate students from six state and private universities (five in Greece and one in Cyprus). Students were administered two questionnaires: a) the Greek version of the Survey of Attitudes Toward Statistics, and b) a short instrument which measures students' understanding of statistical significance and p-values. Results suggest that attitudes towards statistics do not predict students' understanding of statistical concepts, whereas the medium did not have an effect.

Keywords : attitudes towards statistics, blended learning, e-learning, statistical reasoning
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