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Online University Instruction During the Covid 19 Pandemic in Relation to the Domain of Education

Extended summary

The Covid 19 pandemic has led to some major changes and radical reorganization of traditional higher education, its closure, and its rapid transition to online teaching. Such changes led to inevitable problems, especially in the aspect of organization and facing difficulties in adaptating to new working conditions by university staff and students. The students faced many challenges, such as a lack of self-regulation, technological literacy and training for using online distance learning platforms, as well as isolation. The teachers faced some challenges regarding the lack of technological competence and the lack of digital educational resources. From a university perspective, technological infrastructure, teacher training, and technological support represented the main problems.

The theoretical model for the analysis of online teaching, which has received a lot of attention, is the so-called Community of Inquiry (CoI) framework. Online teaching in which a community of inquiry has been built enables learning based on inquiry and knowledge sharing and integrates a collaborative and constructivist approaches to learning. It includes three dimensions: teaching presence, social presence, and cognitive presence.

This paper presents an international study of online teaching in higher education in relation to the field of education. The aim of the research was to examine the differences in the dimensions of online teaching in relation to the field of education. This quantitative research was conducted from October 2021 to January 2022. A customized version of a well-known, multiple-tested questionnaire for the assessment of Community of Inquiry was used.

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The data collected from 808 students were processed by appropriate statistical methods: principal component analysis, internal consistency measurement expressed by Cronbach's alpha coefficient,f and Kruskal-Wallis test. Although the instrument has been modified, all three factors fully correspond to the theoretical model and replicate the factor structure of the original questionnaire, indicating its reliability and validity. High reliability of the entire research instrument ($\alpha=0,941$) was determined.

The research was conducted among students of universities in six different countries: Serbia, Bosnia and Herzegovina, Croatia, Slovenia, Romania and Russia. In the observed sample, the most of the teaching process was carried out online. The results of the statistical analysis showed that there are statistically significant differences in online teaching and in its three dimensions in relation to the field of education. The field of social sciences and humanities consistently records the highest results in online teaching, followed by the field of engineering and technology, natural sciences and mathematics, art and interdisciplinary studies, while the lowest scores were found in the field of medical sciences. The evaluation of the dimensions of online teaching indicates that there are special characteristics of each educational field which online teaching implemented during the pandemic, with its universal attitude towards educational contents, has not recognized.

The research results lead to the conclusion, confirmed by the experience of the developed countries with online teaching, that a sustainable quality of teaching process requires a careful combination of work online and in vivo. The integration of traditional and online learning, which includes virtual research opportunities and workshops, is advised. In this approach, the challenges of learning in higher education after the pandemic could be resolved. The lessons, ideas and experiences gained through the rapid implementation of online teaching during the pandemic will become new standards in post-pandemic times and an inevitable guide for future education.

Keywords: online teaching, dimensions of online teaching, higher education, students

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