

COVID-19 and school experience

Impact of the SARS-CoV-2 pandemic on pre-university physics education: Croatian teachers' point of view

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Physics is one of the natural sciences based on experiments, measurements, mathematical analysis and theoretical models of nature. Both experiments and theories are important in physics lessons and complement each other. Physics education, which formally begins at lower secondary school, continues through upper secondary school, and up to university, is therefore extremely demanding. Due to the SARS-CoV-2 (COVID 19) situation, all schools in Croatia were completely closed down on 16.03.2020 and start was made with "Škola na trećem" and virtual classrooms. Based on this, the study was designed to investigate how this COVID 19 closure affected the teaching and learning of physics, more precisely the effects of long absences from school, alternative teaching, experimental work and learning methods.

The study relies on both quantitative and qualitative PER methods. In the qualitative part, semi-structured interviews were conducted with at least 5 teachers of lower and at least 5 teachers of upper secondary schools. Based on the results of the interviews with the teachers, an online questionnaire was designed, which is suitable for a wide range of physics teachers in the population, and covers the whole of Croatia. We collected 179 responses from teachers (28.7% male and 71.3 % female). If we know that in Croatia are 916 elementary schools and 443 high schools (246 those which have at least one year of physics), then percentage teachers who answered (71,9 % teachers from elementary and 28,1 % teachers of high schools) the online questionnaire is rather good.

These results are of an utmost value at the present state, because the whole world has been confronted with similar distant learning conditions. The unique insights into physics education in such situations, can be used to develop protocols that can be used when distant learning becomes a necessity due to similar or different circumstances. Furthermore, the results will provide insights into the flexibility and responsiveness of physics teachers. Information on topics, about which the entire generation of students is less informed due to COVID-19 absence from school, is also of great importance for later teaching later. The contribution will presented the results of the conducted study in details.

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