

ONLINE VS HYBRID TEACHING - COMPARISON OF STUDENTS' PERFORMANCE ON PRE-EXAM OBLIGATIONS

Milan Radojičić^{*1}, Milica Maričić¹, Veljko Uskoković¹

¹University of Belgrade – Faculty of Organizational Sciences

^{*}Corresponding author, e-mail: milan.radojicic@fon.bg.ac.rs

OBJECTIVE

The aim of the study is to examine whether there is a difference in student motivation and success in pre-exam obligations in terms of how teaching is conducted. Due to the corona virus pandemic, all teaching at the Faculty of Organizational Sciences in the summer semester of 2021 took place online, while in the summer semester of 2022, teaching were held on a hybrid model. The hybrid model implied that lectures are conducted in online teaching while exercises in direct teaching model. The assumption we want to test is whether students achieve better results in the hybrid teaching model. Recent papers on similar topics usually compared pre-pandemic performance with performance during the pandemic (Chisadza et al., 2021; Clark et al., 2021; Dwijuliani et al., 2021; Engelhardt et al., 2021; Nazempour et al., 2022). Novelty of this paper is that it compares performance during the pandemic with post-pandemic performance.

METHODOLOGY

The analysis includes the results of students achieved in the first seven pre-exam obligations in Statistics course, during 2021 and 2022. Pre-exam obligations are fulfilled continuously during the semester. Every week, students take tests related to the material learned previous week. The tests are taken online and in those first seven weeks it was possible to score a maximum of 16 points.

The analysis includes methods of descriptive and inferential statistics. Due to the large sample, it was possible to use parametric tests. The results were obtained and interpreted using the IBM SPSS software package.

RESULTS

The total number of students who took pre-exam obligations from the first seven tests in 2021 is 964, or 83.75% of the total number of students registered for the course. For 2022, that number is 1057, or 87.72%. This result indicates that the activity of students on pre-exam obligations has increased with the change of teaching model. This was confirmed with the Chi-square Test of Independence (with the Yates's correction for continuity), which showed the existence of a statistically significant relationship of low effect size between student activities on pre-exam obligations and teaching model.

The average number of points earned on pre-exam obligations during online teaching model was 13.17 (with a standard deviation of 3.58), while for the hybrid teaching model it was 10.57 (with a standard deviation of 3.45). The Independent Samples T-Test showed the existence of a statistically significant difference of moderate effect size (Cohen's $d = 0.12$) in the achieved points on pre-exam obligations in relation to the teaching model. During online teaching model students scored significantly more points on average. The obtained result is the opposite of what was expected. Table 1 shows the average number of points earned per test. It is obvious that even according to individual tests, it did not happen that a better result was achieved during hybrid teaching model.

Table 1: Average points per tests

Teaching model	Test I	Test II	Test III	Test IV	Test V	Test VI	Test VII
Online	2.74	2.64	1.85	1.74	1.85	1.85	1.73
Hybrid	2.71	2.46	1.81	0.67	1.24	1.43	1.41

CONCLUSION

The obtained result may indicate that performance of students is better in online teaching model. However, it is important to emphasize that this analysis did not take into account the factor of time for test submission or the number of test variations. Time for test submission was shortened by a third in 2022, while the number of test variations was twice as high as in 2021. Possibly this change is a hidden factor of influence that has significantly contributed to the weaker results in 2022. This should be examined in future works.

Keywords: *online teaching, hybrid teaching, students' performance*

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