

Distance learning and the implementation of a flipped classroom model during a clinical course in physical therapy

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Abstract

Background: This article describes the evaluation process of the course “Education to movement” that was converted from a face to face (F2F) course to distance learning due to COVID-19 pandemic constraints. It is an integrative course enabling students to implement knowledge acquired in all core fields, through improving their personal movement ability on the one hand and practicing movement analysis based on demonstrations on the other. The closure of the college campus in 2020 challenged the possibility of teaching in the F2F method. The authors of this article found that this constraint offered an opportunity to revise the course's targets, contents, and teaching methods.

Objectives: 1. To describe an alternative teaching method for a clinical course originally taught F2F, in light of the social distancing imposed during the COVID-19 pandemic; 2. To present the efficacy of a flipped classroom model in a clinical course taught through distance learning.

Methods: First, the process of adapting the course to distance learning using the flipped classroom model is described. The results of the final exam taken in the

2020 academic year (36 third-year students out of 74 learning via distance learning) were compared to the results of the final exam taken in the 2018 academic year (41 third-year students learning in a F2F setting). In addition, a comparison was made between the exam results obtained by third and fourth year students who took the course in the academic year of 2019-20. Sixty-four of the 74 (86.48%) students who participated in the distance learning course completed the self-evaluation questionnaire.

Results: The average score of third-year students in the final exam was significantly higher in 2020 compared to 2018 (87.2 ± 5.7 vs. 82.9 ± 6.2 , $p < 0.001$).

The internal consistency (Cronbach's α coefficient) of the self-evaluation questionnaire was higher than 0.7. In 20 of the 21 statements, the evaluation was 4 or higher on a five-point Likert scale, with a standard deviation of ± 1 .

Summary and Conclusions: Distance learning implementing a flipped classroom model enabled the continuation of a clinical course that integrated students' personal movement experience with movement analysis skills. The academic achievements of students who participated in distance learning were significantly higher compared to those studying F2F. The flipped classroom model improved students' preparation toward real time meetings (online or in class). Therefore, it is recommended that this teaching model be implemented in the curricula of physical therapy programs in Israel.

Keywords: COVID-19; distance learning, Feldenkrais method, flipped classroom model, physical therapy