Problem-Based Learning in Online Settings during COVID-19

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Abstract

Problem-based learning (PBL) provides an appropriate instructional strategy to engage student in active learning, enhance student interest, improve retention, and promote problem-solving and critical thinking skills. The course design at the FHNW follows a classic PBL approach with a self-study period with preparation followed by a reporting phase in which knowledge is discussed and integrated in a face-to-face setting. Due to the COVID-19 lockdown the course had to be converted to an online setting. The aim of this study is to report on student and faculty experiences in a problem-based learning course during the COVID-19 lockdown and present potential implications for online PBL course design. While learning objectives and instructional strategy remained practically unchanged, the discussions online were done in smaller groups than originally planned in order to improve the discussion quality. Results of the survey show that students appreciated the new small group discussion format in the online PBL course more than the whole class discussion in the face-to-face setting before the COVID-19 lockdown. Reasons are the improved discussion quality. Students felt that their chances of making an individual contribution were higher. To minimize the free-rider problem we divided the members of the preparation groups into different discussion groups. The results show that an online PBL course can help students integrate knowledge and promote the deep learning approach.

Keywords: problem-based learning, case-based learning, online course design, teaching and learning, higher education, student experience