

Title: Online learning modules improve musculoskeletal medicine exam scores.

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Purpose:

Effective teaching methods are fundamental in ensuring medical student success. In the spring of 2020, the pandemic forced most medical school courses to go online. As a result, online interactive learning modules were introduced into the second exam portion of the TCOM Musculoskeletal Systems 2 (MSS2) course. This study aims to retrospectively review the effects of this online, interactive, module-based format.

Methods:

Student demographics, course grades and student course feedback from the MSS2 course in spring of 2019 and 2020 were collected and analyzed using a mixed-methods approach. A quantitative analysis was conducted using SPSS to determine if there was a difference in course outcomes between the 2019 cohort and 2020 cohort. Additionally, a qualitative analysis was conducted to compare student feedback between the cohorts.

Results:

Although the final grade for the MSS2 course was statistically significantly higher in the 2019 cohort (88.4% vs. 87.2%, $p=0.025$), the 2020 group achieved a significantly higher average grade for the second exam of the course in which online modules were added (88.1% vs. 86.3%, $p=0.006$). A significantly higher proportion of the 2020 cohort achieved the 80% grade benchmark on the second exam (88.4% vs. 81.66%, $p=0.047$). Post-course surveys revealed that 57% of students want to see interactive modules in future courses, with an additional 28% being neutral.

Conclusions:

The addition of interactive modules to the MSS2 curriculum was beneficial as students were able perform significantly better on the relevant exam material despite entering the course with significantly lower GPAs. Furthermore, the majority of students responded positively to the possibility of seeing interactive modules used in future courses.

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