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Developing and Incorporating an Online Active Learning Module in Health Psychology

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Introduction: Research has shown that in a college classroom, it is typical for there to be significant variation in student learning styles (Truong, 2016). Identifying a student's "best way of learning" increases the likelihood of successful application and retention of relevant material (Entwistle & Ramsden, 2015). Therefore, providing a selection of online learning resources that differ in the manner by which they encourage students to engage with challenging course material (designed as a comprehensive 'toolkit') may be the most effective way to promote learning in a large and diverse college classroom. Additionally, these methods may prove to be particularly timely in their introduction given the large-scale transition to virtual learning that has occurred during the COVID-19 pandemic.

Methods: The goal of this experiment was to develop & test the efficacy of novel, online instructional materials designed to assist students in becoming effective consumers of social science literature in an undergraduate Health Psychology course. Based on previously identified course materials that students have consistently struggled to retain, the two learning goals that were targeted for intervention were philosophy of science and APA-style citations. The efficacy of this intervention was assessed by charting students' objective grade-based performance in the course, as well as by measuring three primary competencies in relation to the learning goals: (1) Understanding; (2) Distinguishing; (3) Applying Knowledge. It was hypothesized that students' competencies would increase when they were given access to the 'toolkit'.

Results: This experiment was broken into two empirical studies and the results from both completed studies are discussed. Study 1 involved the design and implementation of one novel digital learning tool in a Health Psychology classroom. A survey was used to assess the tool's initial efficacy and execution feasibility, as well as measure additional student-identified areas of content weakness. A sample of thirty (n=30) undergraduate students in a Health Psychology classroom were included. 86% of students reported having effectively utilized the learning tool and 96% of students responded that having additional digital learning tools made available would be helpful for their understanding of course material. Study 2 examined the efficacy of a fully implemented 'toolkit' consisting of four digital learning tools operationalized by the use of various web platforms. Results from a sample of twenty-seven Health Psychology undergraduate students (n=27) showed a significant improvement in all three competencies when provided with the additional learning tools, as well as across both learning goals-philosophy of science (p=.05) and APA-style citations (p<.001). Additionally, grade-trends show benefits for students' course performance as well.

Discussion: These results illustrate the benefits of a novel, multi-faceted online 'toolkit' in helping students in the health sciences obtain necessary competencies and meet learning goals. Implications for this research include assisting those with learning differences gain a more in-depth and applied understanding of course material, as well as providing additional support to college students in a typical classroom.

References, if any: Entwistle, N., & Ramsden, P. (2015). *Understanding student learning* (routledge revivals). Routledge. Truong, T. H., Myers, A. R., & Armor, B. L. (2016). Using reflection to evaluate student learning in ambulatory care IPPEs. *Currents in Pharmacy Teaching and Learning*, 8(3), 332-338.

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