

Charting the Course for Online PA Education: The Next Horizon

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Background

The controversial shift to online learning has presented unique challenges to PA educators and students alike. Although many PA programs across the country have incorporated online coursework, new advances in online technology now allow the delivery of entire didactic curricula online. This new online curriculum promotes student engagement and allows for the provision of timely feedback to learners.

Methods

In this novel approach to online PA education, new technology is combined with a problem-based learning (PBL) curriculum to immerse students in a unique didactic curriculum. The online curriculum allows faculty members to use the Socratic method by asking probing questions which may prompt a deeper dive into the subject matter. The Bidirectional Learning Tool (BLT) is a new modality in which students work through a problem independently and submit their answers at different points. This is supplemented by faculty feedback to enhance their learning. In addition, traditional lectures are recorded and transmitted to students for viewing. These online technologies are complimented by on-campus immersion sessions during which students receive teaching focused on the nuances of clinical education. These sessions provide dedicated time for cadaver dissection and development of physical exam and procedural skills. During their clinical year, students participate in online Focused Lectures in Clinical Knowledge (FLICK) presentations, which eliminate the need to be present physically, thus minimizing interruptions of their on-site clinical learning experience. To evaluate the efficacy of the curriculum, student performance on the PA Clinical Knowledge Rating and Assessment Tool (PACKRAT) exam was used, as well as a survey distributed to both students and preceptors to assess their perceptions.

Results

Students who participated in the first two cohorts of this novel curriculum were evaluated at the end of the didactic year using the PACKRAT exam and scored equal to or higher than the national average overall, and in all specialty and task areas. According to an end-of-didactic curriculum survey given to both cohorts, students felt well-prepared for their clinical rotations and believed that the curriculum met their learning needs. After completing twelve clinical rotations, students in the first cohort were rated by their preceptors in multiple areas. On a scale of 1.00 (Strongly Disagree) to 5.00 (Strongly Agree), a total of 430 preceptors rated students' overall preparedness for history taking (4.62/5), demonstration of physical examination skills (4.51/5), oral patient presentation skills (4.56/5), and fundamental medical background knowledge (4.51/5). Using the same scale, the 40 students in the first cohort rated satisfaction with their preceptors highly (4.84/5).

Conclusion

The future of PA education is found in many innovative technologies now available in online education, including strategies for enhancing student knowledge retention and offering feedback to learners. Although data collection is ongoing, preliminary results suggest that when combined with traditional curricular elements such as on-campus immersion sessions and in-person clinical rotations, online technology allowing for face-to-face PBL sessions using the Socratic method in a blended learning environment which incorporates lectures, BLTs, testing and FLICKs leads to strong performance on the national PACKRAT exam and is rated highly by both students and preceptors. Furthermore, these technological advancements can be used to integrate online technology into existing curricula to enhance program outcomes.

References

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Table 1: PACKRAT Performance and Task Area Report

	Class of 2020 First Year 2018 Yale PA Online Year One (n=40)	2018 National Average Year One (n=8667)	Class of 2021 First Year 2019 Yale PA Online Year One (n=58)	2019 National Average Year One (n=1859)
All Examinations Year One Score	137.9 (SD = 19.4)	134.5 (SD = 19.6)	131.2 (SD = 17.0)	128.8 (SD = 17.2)
Clinical Intervention (% correct)	63.17	63.45	57.70	57.19
Clinical Therapeutics (% correct)	54.24	51.02	52.89	52.40
Diagnosis (% correct)	66.45	67.93	68.79	68.76
Diagnostic Studies (% correct)	56.02	56.42	52.05	51.70
Health Maintenance (% correct)	64.90	62.43	60.58	57.97
History and Physical (% correct)	65.18	62.10	59.48	58.22
Scientific Concepts (% correct)	59.98	54.27	54.87	51.13

Table 2: End-of-Didactic Curriculum Survey

	Strongly Agree		Agree		Neutral		Disagree	
	Class of 2020	Class of 2021	Class of 2020	Class of 2021	Class of 2020	Class of 2021	Class of 2020	Class of 2021
The first-year curriculum adequately prepared you in the process of assessing patients and suggesting treatment plans.	22%	8%	72%	92%	6%	-	-	-
The curriculum provided you with a sufficient foundation of knowledge.	67%	17%	33%	67%	-	8%	-	8%
It was helpful having the course material presented by organ system.	100%	100%	-	-	-	-	-	-
The curriculum was presented in a way that encouraged integration of knowledge and clinical application.	56%	25%	44%	50%	-	17%	-	8%
The Clinical Experience in Early Didactic (CEED) enabled you to apply your clinical knowledge.	78%	58%	16%	42%	6%	-	-	-

Table 3: Clinical Preceptor Evaluation Report of Rotation Preparedness

	Number of Students	History Taking	Physical Exam Skills	Oral Presentation Skills	Fundamental Knowledge for Rotation	Overall
Primary Care (3 rotations)	40	4.68	4.53	4.53	4.57	4.58
Internal Medicine (3 rotations)	40	4.59	4.46	4.61	4.52	4.54
Pediatrics (2 rotations)	35	4.55	4.49	4.58	4.52	4.54
Emergency Medicine (1 rotation)	15	4.44	4.44	4.06	4.11	4.26
Behavioral Medicine (1 rotation)	29	4.83	4.56	4.75	4.55	4.69
Surgery (1 rotation)	33	4.48	4.55	4.44	4.26	4.43
Women's Health (1 rotation)	24	4.73	4.62	4.73	4.69	4.69

Grading Scale: 5 = Strongly Agree; 4 = Agree; 3 = Somewhat Agree/Somewhat Disagree; 2 = Disagree; 1 = Strongly Disagree