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The Impact Of E-Learning On Physical Therapy Students' Clinical Skill Development

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Purpose/Background

The purpose of this special interest report is to review the effectiveness of E-Learning in comparison to traditional classroom learning by exploring different methods of implementation of E-Learning into PT curriculum.

Translating knowledge from E-Learning materials to skill performance is important to consider for PT students due to the requirements of psychomotor performance and demonstration of appropriate affective professional behaviors.

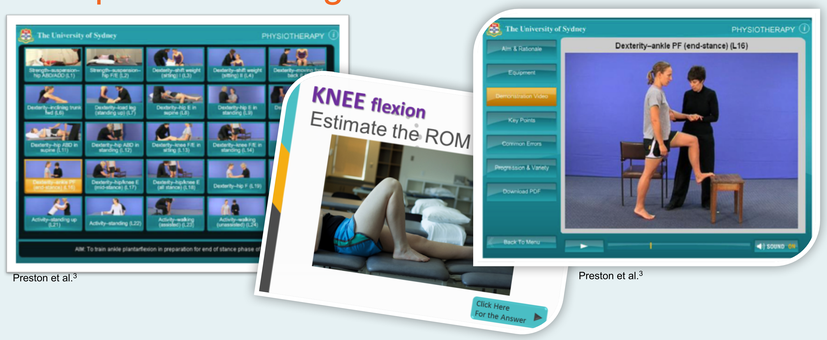
Education delivery via E-Learning is becoming a common teaching mode that appeals to students because it can be:

- completed asynchronously at a self-directed pace
- reviewed anytime, anywhere, and
- as often as necessary for understanding.

Literature Review

A literature search was conducted through PubMed and Scopus utilizing the following key terms: E-Learning, blended learning, physical therapy, practical examination and clinical skills. The search resulted in eight studies in which four were chosen for critical review, as they most closely aligned with the question of interest and compared the use of adjunctive E-Learning methods to a control group who received only traditional, face to face lecture, lab, and access to textbooks. In each study, at least one outcome measure assessed clinical skill performance based on a practical examination.

Sample E-Learning modules



Preston et al.[3]

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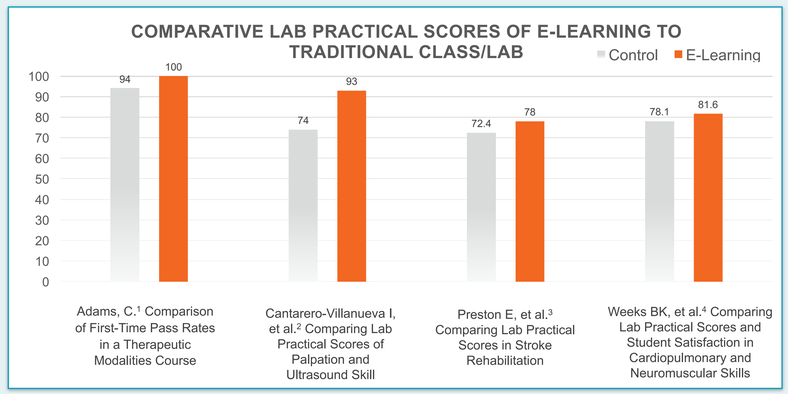

E-Learning Study Review

The first study determined the efficacy of E-Learning compared to a control in a Physical Agents course (n=64). **Experimental Group:** utilized web-enhanced software. **Control Group:** classroom setting. **Outcome measures:** scores on written and practical exams. **Results:** The study found that the experimental group had higher first-time pass rates (on the practical exam, as well as higher satisfaction with the course.[1]

In the second study, researchers examined whether E-Learning enhanced the practical examination scores for palpation and ultrasound imaging skills (n=46). **Experimental Group:** accessed an online resource giving instruction. **Control Group:** utilized traditional in-classroom learning, **Outcome Measure:** scores on practical exam. **Results:** The E-Learning group scored significantly higher in many areas of the exam.[2]

The third study, included an evaluation of the effectiveness of using E-Learning to teach skills in stroke management (n=59). **Experimental Group:** online modules and classroom instruction. **Control Group:** in-classroom and lab instruction. **Outcome Measure:** scores on lab practical and qualitative comments. **Results:** The experimental group scored higher than the control group. In addition, the experimental group reported a positive experience in using the E-Learning resource.[3]

The fourth study looked at student performance and satisfaction using a video-based e-module to prepare for cardiopulmonary and neuro practical examinations (n=62). **Experimental Group:** clinical case videos, evaluating the performance of the therapist in the video. **Control Group:** traditional classroom learning. **Outcome Measure:** exam scores and qualitative results. **Results:** The study found students were highly satisfied with the addition of E-Learning as an adjunct, and found that the experimental groups' exam scores were significantly higher than the control.[4]

Summary

- In each study, students who utilized E-Learning to enhance their understanding of the material performed slightly higher on the practical exam, though not all findings were statistically significant.
- No study reported negative impacts of E-Learning.
- E-Learning was well-received and physical therapy students reported having more confidence, less anxiety, and better understanding of grading standards.
- Since most students entering physical therapy school are digital natives the utilization of E-Learning may relate well to their learning styles.
- E-Learning may be more sustainable over time than traditional teaching methods and affords the learner individualization, self-paced learning and instructional consistency.

Importance to Members

- This review supports the idea that E-Learning could be successfully utilized in a DPT curriculum, as results show E-Learning performance outcomes are at least as good as traditional classroom instruction.
- Because clinical skills require professional interactions and psychomotor demonstration, E-Learning is likely best utilized as a complementary means of learning, but not as a stand-alone source of instruction.
- E-Learning may be more sustainable over time than traditional methods, as it affords the learner individualization in their learning while serving as an interactive resource outside of the classroom.
- Educational institutions may be able to extrapolate this information to achieve long-term cost savings and resource management.
- Overall, students continue to value in-class time to discuss material at a higher level, work through clinical cases, and ask questions for clarification.

References

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