Evidence-based principles for using technology enhanced learning in the continuing professional development of health professionals. Scott KM, Baur L, Barrett J. JCEHP 2017;37(1):61-66. doi:10.1097/CEH.0000000000000146

Why We Chose It:
Technology Enhanced Learning (TEL) is growing in acceptance and expectation in postgrad training and CPD. It has many benefits including: convenience for the busy practitioner, flexibility, and ability to be learner focused and interactive and can be collaborative, enable self-directed learning and be used as a component for blended-learning. Additional advantages include: an ability to standardize courses, reach multiple sites and learners, lower costs, and save on teaching space and travel time.

With this in mind, the authors of this article provide 10 principles for designing, developing, implementing and evaluating TEL for Continuing Education of Health Professionals (CEHP). These were based on a systematic review of the literature on the subject.

1. Clarify purpose and conduct a needs assessment.
    a. Participants will be more motivated if the topic is felt to be important.
    b. Establish the lowest level or baseline because those whose practice is poor are likely to show the greatest improvement.
2. Allow adequate time and technology for development.
    a. Development may involve multiple teams including instructional designers, web designers, subject matter experts, project managers and audio-visual technicians.
    b. Upfront costs may be high and time consuming, but implementation is usually less costly and time consuming.
3. Incorporate approaches proven to improve learning.
    a. Divide courses into a series of small pieces.
    b. Integrate practice activities or assessments with immediate detailed feedback.
    c. Use case based learning.
4. Consider the need for a skills component.
    a. Applies to programs where a skill is needed.
    b. Integrate with a face to face workshop.
    c. Develop online activity using role play.
    d. Consider virtual patients.
5. Enable interaction between learners and with others.
    a. Can use face to face components of blended learning.
    b. Online discussion boards.
    c. Interactive webinars.
6. Create different resources for different groups.
    a. No specific details provided!
7. Pilot before implementing.
    a. Enables modifications to be made to enhance the program.
    b. More efficient than waiting for results of an end of program evaluation.
8. Include measures to retain learners.
    a. Lengthy programs lead to drop outs

       b.   Programs that are too short may not result in learning.

       c.   Consider using a number of shorter courses that build on each other to motivate learners to progress.

9.   Provide opportunities for revision to aid retention.

       a.   Concept of "spaced education". Learners are repeatedly tested through a series of case based learning scenarios that are automatically sent via email.

10. Evaluate learning outcomes, not just satisfaction!

       a.   Learning outcomes include long term retention of knowledge and skills and application to practice.

       b.   Little benefit in evaluating learner satisfaction, self-assessment of learning or intention to change.

Conclusions:

1.   TEL is becoming increasingly popular.
2.   It is beneficial for both learning and teaching.
3.   Chances of success will increase using these 10 principles.