What the Research Suggests for Designing Technology-Enabled Training Grounded in Sound Learning Theory: Summary Points for Practice

Designing learning experiences that utilize emerging technology, such as virtual reality (VR), augmented reality, and mixed reality, can aid in the learning process, identity development, transfer of knowledge and skills, and increased learner autonomy (McGivney, Gonzalez & Medeiros, 2021). However, the success of these outcomes depends on the quality of design, specifically whether the design is grounded in the learning sciences.

We already know a lot about technology-enabled training and the learning sciences. What does the research say? What are examples of "to do's" for workforce educators based upon the findings?

1. **Choose your learning goals and let these goals guide your selection of appropriate technology.**
   Using your goal as a guide, reflect on what might be missing from your learning experience, or what challenges your learners are facing in achieving the goals. From there, you can identify the tools that best address your needs. For example, if learners need opportunities to practice skills and apply what they are learning in a low-stakes environment, VR can provide them in a way that feels real but that may be impossible to accomplish in the real world. However, if your goals are to help connect learners across vast distances, an online learning platform may be better suited.

2. **Once you know your goal and the appropriate technology, design your learning experience based on the principles of the learning sciences.**
   When coupled with sound learning theory, technology can offer experiences that optimize learning outcomes. For example, emerging technology can offer ample time and opportunities for reflection, offer training within multiple authentic contexts to encourage transfer of skills and knowledge, and increase learner autonomy. Technology-enabled learning applications can capitalize on such experiences to improve learning outcomes rather than prioritizing transmitting content to passive learners.

3. **Know your learners well so that you can adapt the technology to best suit your learners.**
   Adapting technology to best suit your learners, their unique histories and perspectives, and their own goals supports the design of effective technology-enhanced learning experiences. Putting the learner at the center of your design will ensure activities are relevant and culturally appropriate—leading to greater levels of motivation and learning. Adaptations such as shifting the flow or speed of learning to meet learners where they are and offering additional scaffolds like concept maps or varied analogies to encourage active processing are possible with modern technologies.

4. **Immersive technology can offer experiences that *complement the teaching that's already happening*.**
   Simply put, there are some things technology cannot replace. It cannot and should not replace good teaching. Rather, it should be coupled with effective teaching to enhance learning. Technology can offer practice in realistic environments, give learners both process and task feedback, and offer experiences that may be impossible in real life such as witnessing phenomena too small to view with the human eye or modeling possible futures. Such affordances complement effective teaching.