

An overall trend in education is moving the content on-line and using more technology tools rather than books and classroom training. We see the technological shift with the introduction of Mobile Learning, Virtual Reality and Augmented Reality training.

IDT Trend in K-12 to Business and Industry

My career has focused on the Business and Industry trend of Instructional Design, but I believe that the K-12 trends are more important to understand than the trends of the Business and Industry educational environment. The K-12 trends are the foundation of tomorrow's workforce. Within 10 years, there will be a new workforce to train, and we need to follow the K-12 educational trends to recruit, empower and train the next generation workforce.

In educational settings, an advantage to using Virtual Reality (VR) or Augmented Reality (AR) training is the ability to have safe experiments. Teachers would no longer have to provide animals to dissect or expensive materials for chemical experiments. The experiments could all be completed using augmented reality in a safe classroom setting. The school would have a material savings, over time, and students would improve their digital fluency by using technology in a safe science based educational setting.

As listed in *Trends and issues in instructional design and technology*, the use of VR and AR in Vocational Education is discussed. The simulation of highly technical task is utilized in Germany, just as it is currently used in the US¹.

There is also a more recent study discussing the usage of VR in education and technical training. Teachers were interviewed and confirmed "teachers expect VR to enrich classes through interactive engagement in situations that would otherwise be too costly or dangerous."² Very similar to the use of VR and AR in German Vocational Education & Training.

The ability to use augmented reality in a training setting by allowing the student to walk through a real-life scenario in a safe environment, is how the US and globally could use wearable technology. In highly technical training programs augmented reality can be used for the student to visualize and walk through of an actual technical task in a safe environment. Students can safely make mistakes in the augmented training before encountering a real-life scenario. The student ultimately feels empowered and confident in technical tasks while also improving digital fluency.

Overall the resources provide a clear understanding of how VR and AR are used globally and in the US. VR and AR used to be concepts and ideas only seen in a futuristic version of education and training. The development of VR apps, instruction design programs focused on the development of VR and AR programs, and the use of VR and AR in entertainment and gaming. It is no longer an inaccessible tool but becoming inexpensive and easy to use in an educational and training environment.

¹ Reiser, R. A., & Dempsey, J. V. (2011). *Trends and issues in instructional design and technology*. Pearson Merrill Prentice Hall.

² Ripka, G., Tiede, J., Grafe, S. & Latoschik, M. (2020). Teaching and Learning Processes in Immersive VR – Comparing Expectations of Preservice Teachers and Teacher Educators. In D. Schmidt-Crawford (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 1836-1844). Online: Association for the Advancement of Computing in Education (AACE). Retrieved June 21, 2020 from <https://www.learnlib.org/primary/p/215964/>.