

Simulation-based Training: Building the Future Geoscience Workforce

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Summary

Geoscientists are required by professional associations and the public to maintain their competency and skills through formal and informal education to conduct their duties. Beside the requirement of continuous education and professional development imposed by professional associations, the ever-changing, emerging technologies in the energy sector, demand for higher efficiency workflows, integrating multi-disciplinary approaches, and getting more value out of existing methods and datasets require the geoscience community to continue learning new materials as they arise.

Within the last decade, education began to adapt to the new digital world. One of these major changes was the start of shifting from traditional classroom-based to personalized learning by incorporation of online educational courses available through web and mobile applications. However, despite the rapid incorporation of these new technologies in the school systems and tech sector, they are entering the geoscience professional communities at a slower pace.

While culture, cost, and shortage of available time comes to mind as possible underlying reasons, the reality is finding high quality and engaging educational applications based on sound scientific principles that improves return on investment is difficult.

We believe simulation-based training on both theory and application is the way forward. In this study we demonstrate using case studies how scientific simulations provide the opportunity for the students/professionals to confirm their understanding of underlying science, get better insight into the data analysis workflows, and most importantly enhance learning engagement and retention by 70%.