Teaching Thousands with Cloud-based GIS

Michael Gould, David DiBiase, and Linda Beale

Esri, Redlands, California, United States (mgould@esri.com)

Educators often draw a distinction between "teaching about GIS" and "teaching with GIS." Teaching about GIS involves helping students learn what GIS is, what it does, and how it works. On the other hand, teaching with GIS involves using the technology as a means to achieve education objectives in the sciences, social sciences, professional disciplines like engineering and planning, and even the humanities. The same distinction applies to CyberGIS.

Understandably, early efforts to develop CyberGIS curricula and educational resources tend to be concerned primarily with CyberGIS itself. However, if CyberGIS becomes as functional, usable and scalable as it aspires to be, teaching with CyberGIS has the potential to enable large and diverse global audiences to perform spatial analysis using hosted data, mapping and analysis services all running in the cloud.

Early examples of teaching tens of thousands of students across the globe with cloud-based GIS include the massive open online courses (MOOCs) offered by Penn State University and others, as well as the series of MOOCs more recently developed and offered by Esri. In each case, ArcGIS Online was used to help students achieve educational objectives in subjects like business, geodesign, geospatial intelligence, and spatial analysis, as well as mapping.

Feedback from the more than 100,000 total student participants to date, as well as from the educators and staff who supported these offerings, suggest that online education with cloud-based GIS is scalable to very large audiences. Lessons learned from the course design, development, and delivery of these early examples may be useful in informing the continuing development of CyberGIS education.

While MOOCs may have passed the peak of their "hype cycle" in higher education, the phenomenon they revealed persists: namely, a global mass market of educated young adults who turn to free online education to expand their horizons. The ability of CyberGIS to attract and effectively serve this market may be one measure of its success.