

Bringing Geoscience to K-12 Education via Global STEM Classroom®

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Join our interactive discussion to learn about Global STEM Classroom® programs successfully run since 2008 in Massachusetts K-12 schools in collaboration with schools in UK, France, Netherlands, Russia, Norway, Mexico, and Ukraine. We will share our experience of collaborative teaching and learning in globally dispersed/ virtually connected classrooms where students worked in global multicultural teams on multidisciplinary STEM projects – including geoscience projects based on NASA GLOBE, NASA GRACE, Nano-tech etc; share “lessons learned” of the collaborative digital curriculum/lesson plans/instructions development; we’ll discuss implementation of the 21st century pedagogical approaches and core components of the program – including innovative collaboration and communication technology; intercultural communication, and global team-work. We will also discuss the study was undertaken (Dr. Russell Faux, DSRA) (Dr. Vitaliy Popov, University of San Diego; Larisa K.Schelkin, Global STEM Education Center, Inc. Dr. Russell Faux, DSRA “Preparing globally competent and competitive STEM workforce of the 21st century in the Global STEM Classroom” <https://peer.asee.org/27254>) to answer the following research question: What are the attitudinal effects of participation the Global STEM Classroom® in terms of students’ motivation for participation, levels of engagement, and interest in continuing to participate in similar projects? The research model was a within-group, change-over-time model and data collection relied largely upon pre-post survey findings to determine whether the Global STEM Classroom® was effective at meeting its declared objectives. The methods included an extensive online survey comprising the constructs embedded in the research question. Findings from the survey showed that:

- Students chose to participate because they were motivated by the content, the possibility of collaborating internationally, or because they thought it would be good for their academic and future careers.
- Students most enjoyed the interactive aspects of the project.
- Students tended to use relatively simple and ubiquitous communication tools (e.g., Skype, Zoom, Go To Meeting etc).
- Teachers were motivated by the professional development opportunities and by the idea that the project would be good for their students.
- Teachers also enjoyed the interactive aspects of participation, including the guest speakers (STEM professionals)

We invite the participants to discuss the benefits of this pedagogical approach and how we can help K-12 educators to bring geoscience into the Global STEM Classroom® and help them to expand their global network with geoscientists who are sharing the passion for K-12 education of the 21st century.