

EDUCATION – PARTNERSHIP EVENT REPORT AND RECOMMENDATIONS

Report Writer's Name:

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Location: Copper Mountain,
Colorado

Event Date(s): 28 June – 1 July 2004

Event Name:

18th Annual Technology in Education (TIE) Conference

Purpose:

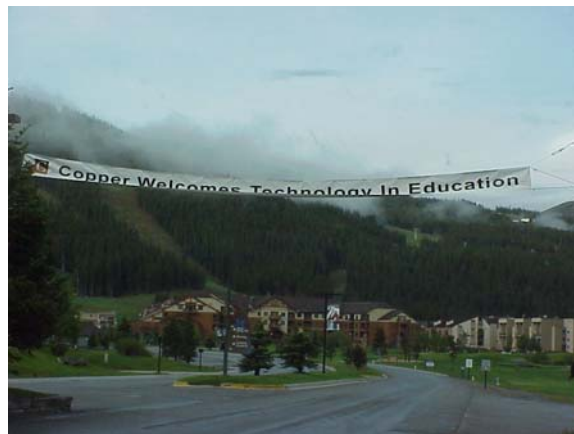
Provide networking and training for teachers and technology coordinators in the use of a variety of technologies in K-12 education.

Executive Summary

The Technology in Education conference provides a unique opportunity for educators and coordinators to learn about a wide variety of technologies, and also learn from and network with each other. TIE is the largest educational conference in Colorado, attracting over 1,100 teachers from Colorado and elsewhere annually.

I taught a hands-on workshop on the Global GIS project (rockyweb.cr.usgs.gov/public/outreach/globalgis/). I also helped organize a geocaching event with GPS receivers, and helped Ashok Wadwani with his GPS workshop. I attended GIS workshops by Esther Worker, Sophia Linn, and Brenda Faber, and operated a USGS information exhibit.

Overview



TIE banner hanging over the road to the Copper Mountain Resort, Colorado. TIE has been held at Copper Mountain for the past several years and will be held there at least through 2007. This year's conference theme is "Education Technology Rally."



This year's conference, held at the base of the chair lift, included morning strands organized into tracks, and a new exhibitor tent facility. I was pleased to see so many geospatial technology sessions at the conference—GIS, remote sensing, visualization, GPS, and more.



TIE is a Colorado-based organization founded in 1986 by a group of teachers with a vision of the important role that technology would play in education. This year's conference featured over 150 different workshops and 80 exhibitors.



Some of the TIE attendees gathering for the keynote address. It was a great privilege working with these educators, and I learned a great deal.



Jack Kriss, one of the TIE board members and organizers of the conference, and Director of Technology at the University of Northern Colorado's Monfort College of Business, addresses the attendees at the opening session. The TIE conference workshop topics shows the enormous variety of innovative ways that technology can be used in the curriculum—not just for technology's sake, but to enhance teaching and learning.

The success of this annual conference, in my opinion, stems from an active board of directors, who labor for an entire year to ensure that the conference is a valuable experience for all attendees, from the excellence of the presenters, from the enthusiasm of the attendees, and from the philosophy of the event—that all workshops are hands-on. Hands-on means, in short, hundreds of computers, networks, and other equipment planned for, taken to the conference site, prepared, and taken down. This is a huge logistical feat, but is appreciated by all who attend the conference.

This was the second year in which I have attended the TIE conference. My 2003 report is on: <http://rockyweb.cr.usgs.gov/public/outreach/reports/tie03t.pdf>. I made so many excellent contacts that fostered educational

partnerships last year that I have been looking forward to returning ever since. Last year, we held a separate conference, GeoTech, immediately prior to TIE. This year, we moved GeoTech to Denver during the previous week. My report of the 2004 GeoTech event is on: <http://rockyweb.cr.usgs.gov/public/outreach/reports/geotechco04t.pdf>. Even though GeoTech was separate from TIE this year, the TIE conference featured at least 4 GIS-based workshops and several GPS workshops.



David Warlick (www.landmark-project.com) provided a very interesting keynote address entitled "Learning and Literacy in the 21st Century—Redefining Literacy for a New Century." He discussed ethics, the value of information, good vs. bad knowledge, and what we need to know in our schools and in society. I was surprised and pleased to see him map USGS earthquake epicenters using a scatterplot in Excel!

Geocaching

Geocaching (www.geocaching.com and other sites) is an enormously popular activity involving the caching (hiding) of something, recording the position with Global Positioning System (GPS) receivers, and then telling others the position of the cache, encouraging them to find it. We

operated a geocaching event at the TIE conference, and there was another one the following day.



At the request of the TIE board and attendees, we organized a geocaching event for the attendees. I bought stamp pads, stampers, and plastic bins for this event, and hid these in interesting locations on the ski slope and in the resort village. We gave each participant a sheet of 10 UTM coordinates with clues and a GPS receiver. This provided a hands-on way to start using this important technology for the 21st Century.



After a briefing on what GPS is and some reasons for using it in the curriculum, the participants had an hour to find the 10 geocaches. Surprisingly, many participants found all 10 in an hour, despite the length of

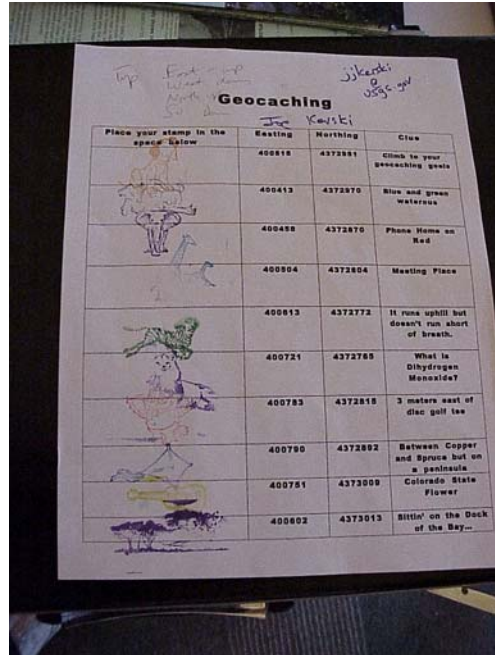
the course!



Ashok Wadwani, right, from Applied Field Data Systems in Houston, explains the operation of the GPS receivers with two of the participants.



Once the participants found each geocache, they stamped their papers with the stamper in the geocache.



Above, a completed geocaching paper showing the clues, coordinates, and stamps.



Ashok Wadwani and RJ Kern (National Geographic) at the "command center" for the geocaching event. We featured prizes from National Geographic, USGS, and ESRI for all who participated.



RJ Kern shaking the hand of the grand prize winner—some of the software that RJ donated from National Geographic.



The clue for this geocache was “It runs uphill but doesn’t run out of breath.” (The ski lift!).



The geocaching event was an excellent way to introduce participants to GPS. I thank RJ Kern, Esther Worker, Ashok Wadwani, Shelley Olds (UCAR-DLESE), and two students from the University of California-Santa Cruz for helping make it a success!

Workshops

All of the spatial technologies workshops were full. My workshop featured the lessons I have been writing based on the Global GIS project. We used ArcReader software to explore plate tectonics, earthquakes, and volcanoes. Sophia Linn and Brenda Faber’s workshops included lessons from the ESRI Press books *Community Mapping* and *Mapping Our World*, and using historical fly-through data with CommunityViz software. Alan Sills demonstrated the creation of 3D real time earthquake maps.



Above, Esther Worker from ESRI conducts the first GIS workshop of this year’s TIE conference, entitled “GIS 101 for Schools.” Esther has been extremely supportive of GIS in education for many years and the entire educational community appreciates her efforts!

Some of the reasons for the growing interest in using GIS and GPS in the classroom are that these technologies and

methods are inquiry-based, problem-solving, they are connected to national and state geography, math, science, and history standards, they increase student interest, and they provide employment opportunities.

As there were nearly 1,000 people in the room where the awards and karaoke were being held, I took advantage of the opportunity to plug GIS and tell a GIS joke before singing a few songs!

Information Exhibits



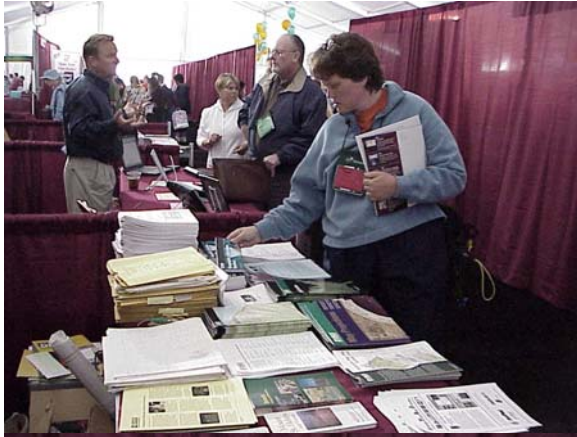
This year, Copper Resorts purchased an enormous tent for the TIE conference exhibits, because of the success of this event. Exhibitors at TIE included companies and nonprofit organizations that promoted learning with technology, including hardware and software manufacturers such as Palm and Epson. This provides an excellent way to examine some of the latest technologies.



Joseph Kerski at the USGS information exhibit. I distributed various topographic and thematic maps, posters, and booklets on GIS, mapping, biology, earth science, geography, and hydrology. I also distributed some of my own GIS-based lessons and those written by others. The emphasis of the exhibit was how to use USGS technology in education—GIS, GPS, earthquake bulletins, real time hydrographs, near real time wildfire mapping, and more.



While I'm an advocate of high-tech learning, I use a great deal of low-tech methods as well. Above, a conference attendee examines the 3D model that we made using plastic salad trays.



The exhibits were especially crowded during a two-hour evening session on Day 2 of the conference. The materials I distributed were very popular with the educators, and it was a privilege talking with them about what they are doing in the classroom. USGS earthquake center staff were also in attendance at the conference, conducted a workshop, and operated an exhibit.

Other interesting things at the exhibit hall included an extremely sharp Epson plotter, a Microsoft-Office competitor product from Sun, and a do-it-yourself bookbinding machine.



Prize giveaways during the last hour of the conference, 1 July 2004. I and other vendors donated a large variety of items for the conference attendees.

Observations and Recommendations

The TIE conference emphasizes interdisciplinary linkages between technology and core disciplines. It also emphasizes examining real-world issues in education and standards-based education. Therefore, I believe that it is important that we remain involved with this conference.

I believe that the USGS should play a major role in preparing teachers and students to use our data and products, and spatial data and technologies. Our relationship with the TIE conference organizers is a good one.

The reason for conducting workshops at the conference is to add value to our presence above and beyond our exhibit. By conducting workshops, we have the opportunity of working one-on-one with the teachers. We have the opportunity of obtaining their feedback on curricular materials that we develop. We work with educators to demonstrate **how** our products and spatial data in general can be used in conjunction with national science and geography standards. It does more than simply telling folks **what** products are available.

I emphasized USGS strength in real-world data and technology in education, particularly geospatial and scientific information. Both the growth in educational technology and the curricular content standards present excellent opportunities for us to introduce our data and products to students and educators across the country. Educators who are trained in the types and applications of our data are a powerful lobby for the USGS. Students familiar with our data will form a geospatially-literate society. Another objective was to "train the trainers"-teachers--to magnify our effectiveness and maximize our limited resources. These trainers will themselves network with and train other teachers, administrators, and students.

We need to remain involved in education as an agency. Education shows our relevance to Congress and the general public. Education serves the needs of diversity, recruitment, and retention. Education ties into all six major communications audiences.

Acknowledgements

I appreciated the USGS' support of the time for my attendance at this event. Again, I thank those who helped with the geocaching event. I thank Mark Thorpe and Steve Reiter for the use of the USGS GPS units.

I thank the other members of the GeoTech board, for their hard work over the past year to make this a success. I thank Jack Kriss, Randy Stall, Joe Buzzitta, and others at TIE for their enthusiasm and support.

I especially thank the attendees for their dedication and vision. It is a pleasure to work with them.



Mist on Copper Mountain, 30 June 2004.

*** End of TIE 2004 Conference Report ***
