

ASIS&T ANNUAL MEETING PLENARY SPEAKERS

Using Technology to Transform Education: Aaron Doering Addresses Annual Meeting

by Steve Hardin

2015 Annual Meeting Coverage

EDITOR'S SUMMARY

At the 2015 ASIS&T Annual Meeting Aaron Doering, professor of learning technologies at the University of Minnesota, shared his passion for using technology to transform education. Doering offered transformational advice for the teaching and learning process, starting with the importance of creating experiences that engage learners and inspire change. Doering's approach is based on adventure learning, enabling students to design their learning experiences, studying real world issues through his team's on-site activities and coordinating with related classroom learning opportunities. Linked by global information services, collaborative learning occurs without boundaries. Students can share stories with community members around the world, continually broadening their awareness, perspective and connections and even be recognized as topic experts in their own geographic areas. Doering urged meeting attendees to actively pursue innovation in education and to maximize the potential of technology to transform and expand learning possibilities.

KEYWORDS

educational technology	educational activities	innovation
education	e-learning	collaboration

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Plenary speaker Aaron Doering is a professor of learning technologies at the University of Minnesota who directs the university's Learning Technologies Media Lab. He's been named a top innovator in education by the Coalition for Science Education. He's made more than 200 conference presentations and has developed more than 15 online learning environments. He may be reached at adoering@at.umn.edu. Twitter: @chasingseals

Aaron Doering characterized his plenary presentation at the 2015 ASIS&T Annual Meeting as “sharing a decade of passion,” a passion he also hopes to instill in students.

He noted that the Learning Media Lab that he directs at the University of Minnesota was put together to explore how we can use technology to transform education. Technology affects the way we think, act and feel. Transformational learning, he said, is about placing opportunities in the hands of learners, regardless of their age, race or wealth.

He then outlined “9.5 Technology Transformation Guidelines” as follows:

1. **Design experiences, not products.** Think engagement, not completion. He wants students to have experiences they will tell others about. Create change; don't simply respond to it. “Adventure learning” is a hybrid model to identify an issue in a place to be studied by actually going there. Doering's team identifies what they want students to learn through an inquiry-based curriculum. Then they consider how to create an adventure-based experience. How can they collaborate with teachers? They bring it all together through synchronized learning. They also give pedagogical guidelines so teachers can integrate the material into their classes. They use the internet. For example, the Arctic Transect & GoNorth! adventure learning trips (<http://chasingseals.com/gonorth/>) covered thousands of miles in the Arctic, spanning several countries and reaching millions of students.
2. **Build trust.** Demonstrate commitment through experience and attitude. The old way of doing things involved an instructor developing content and then designing lessons to convey it. That's now turned upside down: the design leads into the content, facilitated

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- by the instructor. How do we get students involved in the environments we create?
3. **Guide learners as designers.** It's the power of the story that engages us. Doering referred to the North of Sixty project (<http://chasingseals.com/north-of-sixty/>), in which he worked with Inuit elders, who shared their voices with the world. He worked with six Canadian Arctic communities and tied what they shared to an expedition. Using an iPad, they could upload their stories to the learning environment so everyone could see. The arrangement provided lessons and educational resources for teachers.
 4. **Recognize learners as experts by experience.** Everyone has an expertise in some area; how can we tap that? He showed an Arctic blog in which students shared their expertise about whaling and living in the community. It became the most active area of the online community. Let students be experts within an area identified by GIS. The Geothentic project (<http://chasingseals.com/geothentic/>) has participants identify an issue and then deal with it through analysis. For example, where's the best place to build a hospital in San Francisco? The project brought students in and excited them about the tasks they needed to solve.
 5. **Encourage collaboration, working together without boundaries.** We're in a world with no boundaries, Doering said. Community is built at the point where our stories intersect. Earthducation (<http://chasingseals.com/earthducation/>) is a series of seven expeditions to every continent over the course of four years, designed to create a world narrative of the dynamic intersections between education and sustainability. Participants designed new learning environments every time they went to these places, doing live updates at each location. The project was set up so that students could ask about various issues. The project got students, teachers and other



- adults to collaborate. It's now being funded through an angel ambassador. It has impacted 76 communities, more than 15million students, all 50 United States, 3,000 classrooms, 6 continents, 41 journal articles and more than 150 conferences.
6. **Delight in aesthetics.** More than beauty, this concept deals with usefulness. How can we design something that will engage learners and make them come back to it? Doering and his team put the design phase at the top of the process, instead of the bottom.
 7. **Inspire self-narrative.** Focus it around real world issues. Expedition 1 of the Earthducation project (<http://lt.umn.edu/earthducation/expedition1/>) traveled to Burkina Faso, collecting interviews with elders, kings, farmers and others. Expedition 6 went to Nepal (<http://lt.umn.edu/earthducation/expedition6/>), where people shared their stories. The project showed the power of social media. He decided to tweet at CNN. CNN called the university, and Doering wound up on CNN reacting to a White House announcement on climate change. The video went viral (www.youtube.com/watch?v=NayfbGCXdw). Also, the Weather Channel provided updates from their Arctic expedition every six hours. One narrative was written from the perspective of one of their dogs, named Timber. Timber's postings became one of the most visited areas on the website. They gave students something to get excited about.
 8. **Reference knowledge domains.** TPCK (Technological Pedagogical Content Knowledge). How can we build it within our learning environments?
 9. **Innovate! Teach for change.** In 1922, Thomas Edison predicted motion pictures would make textbooks obsolete. Doering showed a TV commercial in which a teacher apologizes for the failure of the old-fashioned educational system. It's one of his favorite ads, he said. For him, it's time for innovation in education. What about user-driven

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adventure learning? He designed an environment called WeExplore (<http://chasingseals.com/weexplore/>). Students and teachers can go there and build their own content. This is how we get students to innovate. People want to fund these tools, too.

9.5. Design as a learner. Doering quoted Einstein: “It’s a miracle curiosity survives formal education.” What’s next? Developing Earth Explorers – using GIS in classrooms (<http://chasingseals.com/earthxplorers-2/>). The idea is to have GIS in all classrooms and teach students and teachers how to use it effectively. Knowing how to use GIS is crucial in our connected world. It ties together various topics. But GIS is nothing without good content. One possibility is AgCultures (<http://agcultures.com/>). Participants travel the world to get students excited about innovations in agriculture. What opportunities exist for you to help solve the world’s food challenges? Participants work online alongside the innovators. A few are even chosen to travel with the AgCultures team. There’s a focus on storytelling in all these projects. The Changing Earth project (<http://chasingseals.com/the-changing-earth/>) is a plan to visit various locations worldwide starting in 2016 to educate learners about “sustainability, resilience and the role of traditional knowledge.” It will use the GoX app, which Doering described as “Instagram on steroids.”

Doering pointed out how important it is to stop and take time to think. He asked audience members what their next challenge would be. He concluded with the observation that academia is a great place to be because you get to wake up every morning and think about what you’re going to do to transform.

During the question-and-answer session, Doering said he travels with

small teams. They design before they go into the field. The team must come together and have the passion to do something that’s never been done this way. Egos, he said, must be left behind; they hurt collaboration.

Doering said he always tries to find corporate partnerships to help finance his expeditions. There’s usually a corporate sponsor who wants to be known as a company that helps out with these things. He also talks with school administrators about giving teachers the time to develop the expertise they need. Doering has found their websites get used a lot right before state testing times and then usage drops. So they try to align them with state and national standards.

Doering remarked that one tribal elder told him he was sick of white men coming to interview him to get PhDs. We need to be giving something back. Go into their community to help them with something, whatever that might be: cleaning up oil barrels, etc. There’s always guilt associated with any of this. But Doering said that in 15 years of travel he’s never had a bad experience. Everyone likes to smile and laugh. Work with the locals and make sure you’re doing things their way before you get there. He said he tries to fade back and let people tell their stories.

What makes him want to keep telling the story is the excitement of seeing people learn about these things. The projects take a lot of time and energy. But he said he can’t think of life in any other way. The world is a beautiful thing, and he can’t wait to meet people and hear their stories. He wants to share it through books he doesn’t have time to write. Sometimes he asks himself why he does this when he could just go back and write in his office. But he has a commitment to do education in a different way that motivates students and teachers.

Doering finished his presentation by inviting audience members to share in his activities by reaching out to him. His website is <http://chasingseals.com>. You can also follow him on Twitter: @chasingseals. ■