

# Trendsetters

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## Conversations with innovators in learning and technology

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### General Questions

**Fred:** Hi Jason! Thanks for participating in the TrendSetters Column! Could you start by describing how you got started in the field of Instructional Design? What are some of your first memories or big events from your first experiences in the field?

**Jason:** Hi Fred. A friend showed me the Internet in 1992 or 1993, and I was blown away. I spent all my free time trying to grasp the possibilities for learning and society. I thought about going to graduate school in education or sociology; then someone told me about instructional design on an airplane. I think it was Jenny Johnson, who had recently published a survey of programs. Around the same time I saw Beverly Hunter give a talk at the Boston Computer Society. She was the author of a groundbreaking 1983 book called “My Students Use Computers,” and was sharing her latest paper on Gopher (what we used just before the web). I found some typos, sent these to her, and



*Jason Ravitz*

took the opportunity to ask a couple questions. This led to a conversation, and shortly thereafter she helped get me hired at BBN Educational Technologies helping to staff the National School Network project. I had a chance to work alongside pioneering inventors of LOGO, Co-NECT Schools, Learning Sciences at Northwestern, and Concord Consortium. I worked there throughout graduate school and began to see a need in the areas of research and evaluation.

**Fred:** What an interesting way to get started! It is important to realize all of the help we get from people along the way. What were some of the main things you were involved in?

**Jason:** I'm not sure if it was just youthful enthusiasm or something about the times, but with the early Internet it seemed like everyone was learning and supporting each other. I was lucky to have learned enough to get hired at BBN, but after that, I had mentors who guided and encouraged me. I was able to experiment with new technologies and share what I was learning with others. For example, I got to build the first websites for Co-NECT Schools and Syracuse's IDD&E (Instructional Design, Development and Evaluation) program, because I learned about web servers and HTML early. Soon everyone was designing websites and the key question became how to evaluate all this work.

**Fred:** It is amazing what can happen when we focus on our passions and explore our interests. Jason, what appeals to you most about the field of Instructional Design?

**Jason:** I like the historical perspective the field brings, and the systems-oriented thinking, especially the attention to feedback and cycles of design, development, implementation and evaluation. I appreciate that there is

room for people with different talents, designers, software developers, and subject matter experts, bridging social science and computer science, etc. People do not realize that instructional design is in every field. When I visited my old high school in Detroit I tried to tell the students that for almost any career path there will be jobs helping people teach and learn better.

**Fred:** That is so true! It is unbelievable how flexible and diverse this field is. It takes a while to even get a handle on what the field is all about, given how complex all of the relationships can be. There really is a part for ID in every profession. What is the focus of your research agenda and work in the field?

**Jason:** My focus has been on the advancement of new technologies for teaching and learning and how to evaluate their impacts. Across many years and projects, I have always sought to understand effective designs, conditions for innovation, and the equity of implementation and outcomes. This has involved large government-funded studies of technology and pedagogy, working with educational technology leaders, and helping progressive reform organizations better serve diverse school populations.

**Fred:** That sounds like an agenda that keeps you on the front lines and working with really innovative people. How did you decide to become involved in evaluation?

**Jason:** It dawned on me that evaluation could be a focus on November 1, 1995. I was a delegate to a three-day workshop, *Setting a Computer Science research Agenda for Educational Technology* sponsored by NSF along with most of the early leaders in educational technology. The report of this meeting was edited by Mark Guzdial and Fred W. Weingarten and is available online.<sup>1</sup> There I was, sitting at the feet of Linda Harasim and Margaret Riel, Chris Dede and others. After many hours of not hearing

anything about evaluation, I got up the nerve to ask about this. No one had much to say, as I recall. However, during the next break Linda and Margaret both approached me asking for ideas about how to evaluate their work. I decided I had to come up with some in a hurry!

This led to my evaluating the Online Internet Institute for teachers, where we experimented with ways to weave evaluation into design, including creative use of signup data for “a Great Matchup”, and a peer feedback system with discussion forum. This work still has a very magical quality for me, and continues to inform my thinking<sup>2</sup>, but it didn’t yield a dissertation. At the time, there wasn’t enough research and theory to make a convincing case for what I wanted to do. Really, the relevance of online technologies for learning had not yet been established. As a result, I started working on survey studies with Hank Becker to understand how technology was impacting education more broadly.

My dissertation on Internet use in the National School Network addressed for whom and under what conditions we might see an impact on teaching and learning. This led to work on the TLC’98 (Teaching, Learning, & Computing) national study. After these studies I felt we understood the prevalence and importance of new technologies and the key role they play for teachers who are engaged in progressive instructional reforms.<sup>3</sup> So, I returned to my earlier focus on how to evaluate the design and implementation of more specific technology programs and constructivist-oriented instructional innovations like project based learning. It turns out, as the TLC study showed, that conditions for innovation are very similar for instructional reforms and new technology uses and these are closely connected.

**Fred:** The reports from the TLC’98 studies are interesting for sure. I wonder if the availability of that type of rich information will grow with big data or open data. Are those large

studies your main focus now, or are you more involved in other things?

**Jason:** Well, to answer your first question, data sets of the quality Hank produced don’t grow on trees, and probably never will. You need an intensive instrument and study design process that is going to be different for every study. It is interesting to think about automating parts of this, but you still need to understand the stakeholders, ask good questions, and think a lot about design.

In academic circles, I am known for larger surveys and impact studies. However, I also value opportunities to evaluate new products and services, designing ways to get feedback to people who need it, creating measures and “data dashboards”. This emphasis on creating feedback mechanisms for teaching and learning programs was the focus of my second post-doc at SRI International and helps explain my longevity at the Buck Institute for Education (BIE) where we worked with hundreds of schools.

My preference is to have a balance of designing evaluations for new initiatives and carrying out studies of implementation and impacts when they have reached a certain maturity. Ideally, effective evaluations will support teaching and learning throughout the lifecycle of a project and allow you to produce better research results in the end.

**Fred:** I like that you mention having a balance between longer-term projects and more immediate and practical ones. I think we, as a field, have to have our eye on both short and long-term spectrums in order to maximize our relevance. So, what are two works by other people that you found very provocative or informative?

**Jason:** There are so many highlight reels in my mind. One area is Everett Rogers’ *Diffusion of Innovations* and the CBAM research by Hall and Loucks, et al. They did a lot of work so we don’t have to.

It is also important for us not to lose our humility or humanity when

working with teachers and schools, to understand and address concerns about equity and the impacts on society. I think blogs like those from Larry Cuban and Diane Ravitch are very helpful for this.

**Fred:** The innovation and adoption literature is important and interesting for sure, and I am glad that you mentioned retaining humility and humanity in our work. Everything we do involves people. It is easy to forget to put ourselves in the shoes of the learner (or user/client/etc.) when we are designing or building things. Would you name a few people who have had the most important impact on your career?

**Jason:** I would start with Beverly Hunter for bringing me into BBN, and Ferdi Serim for letting me work on the Online Internet Institute. After that Don Ely, for giving me a role in development of his “classic writings” volumes on educational technology, for being a mentor and letting me co-teach with him as part of the Future Professoriate program at Syracuse.

I would not be in this game without the good people in the IDD&E program at Syracuse, especially Nick Smith, who opened my eyes to the world of evaluation, Jeffrey Katzer, who finally helped me understand statistics as tools for testing knowledge, and Phil Doughty and Linda Tucker who expertly managed to get me through graduate school.

However, I also owe a debt to people like Brent Wilson, Tom Duffy, and David Jonassen for opening the field of instructional design to constructivist-oriented thinking, as well as Charles Reigeluth for his work on systemic change, and Alex Romiszowski for his attention to information mapping.

Finally, Hank Becker is really the one who helped me figure out how to operationalize and measure concepts like Ely’s 8 conditions. He mentored me as I developed my quantitative research skills that allowed me to contribute to his studies of technology use and pedagogy, and to move into conducting studies of student outcomes.

I could just keep going, including more people from Syracuse, Mike Eisenberg from AskERIC, Margaret Riel who I got to work with at UCI, everyone I was lucky to work with at SRI International, at BBN, at BIE, and on and on.

**Fred:** That is a great list! There is some gravity to recognizing that things we often take for granted are the way they are because of the efforts of others, and by extension that we are right now shaping the way things will be for the next generation of ID’ers. It reminds us of the importance of being reflective about what we do, and of considering opposing perspectives and criticisms honestly.

What major trends do you see influencing the field right now and in the near future?

**Jason:** Before I left BIE we did a study addressing teaching and learning for the 21st century and how project based learning can help teachers prepare students for the challenges they will be facing.<sup>4</sup> A related concern is lack of technology fluency in wide segments of our society. I’m referring to the ability most of us have (or don’t have) to shape new technologies to meet our needs. Increasingly, we see efforts to improve computer science education so that more diverse students and women can get involved in creating the technologies of the future. In my new job at Google, I will be looking at how to evaluate computer science education initiatives like these.<sup>5</sup>

Another trend for me has been use of information systems like Customer Relations Management (CRM) software in educational organizations. As new capabilities emerge, using these systems to support professional development and research on teaching and learning seems like a natural next step. I’m also trying to follow developments in youth culture, how game design can support assessments for learning, and how online learning enables new forms of educational

data mining to assess learning processes and outcomes.

**Fred:** That is interesting. Work with online educational data has the potential to provide an extremely vivid picture of what impacts new technologies are having on learners. Gaming and youth culture investigators are also exploring some really interesting practices. It will be interesting to see how these areas are shaped in the next few years. Do you see any major research gaps or areas of need in the field?

**Jason:** We need to figure out if the Common Core can realize some of its more hopeful promises, providing a model for more effective teaching, learning and assessment. Making instruction more meaningful and using more authentic performance tasks sounds like a good thing for education. However, it seems like this would require de-emphasizing high stakes testing for a while and focusing on teacher capacity for creation and use of such tasks throughout the curriculum. I think we know how to work with teachers on research and development of new assessments, but it is too rare for accountability systems to reinforce teaching and learning the way we might like.

**Fred:** That is a good point. The more complex the system, the more unpredictable the relationships are, and the more opportunity for error. What other areas do you see impacting the field?

**Jason:** There have been breakthroughs in collaboratively examining teaching practices and student work. I am intrigued by ideas from the Critical Thinking Consortium and Roland Case who emphasizes that application of shared criteria is at the heart of critical thinking. Combined with tools like Project Foundry or ShowEvidence, we could give rubrics a much needed overhaul, so they do a better job of promoting critical thinking when they are used. Instead of just relying on expert judg-



es we should try to give teachers and learners tools for establishing and applying criteria themselves. There is a risk of over-filtering information, so I see this as a part of a solution for evaluating innovations more effectively in a way that honors diversity in social and local contexts.

**Fred:** Great ideas! Critical thinking and the filtering of information is definitely an area that could use some more attention. What advice do you have for IT researchers/practitioners who are just beginning in the field?

**Jason:** Learn from the textbooks, but be ready for surprises. Key decisions are often out of your hands. Advocate for best practices, but be prepared to put them aside (or walk away from jobs) when they are not feasible. Try to respond to constraints by thinking outside the box when you can.

Also, look for people who are doing work you admire and see if you can make yourself useful. If you are actively helping to solve their problems, people will want you to be successful. This creates a virtuous cycle! You don't need to wait for a formal invitation either. When I emailed Bev there was no advertised position at BBN, I was just helping out and it turned out there was much more I could do.

Finally, finding a focus is good, something you want to accomplish and become known for doing. People should know you are the person to call for X, and you should have people you can call for Y. If you try to do everything you will miss opportunities to become good at what others aren't, and people won't know how to use your talents. As interested as I am in design, I still rely on professional designers and developers, and editors (Thanks Fred!). I see my job as focused on research and evaluation first, and I let others do what they do best.

**Fred:** That is great advice! One, know content, processes, and practices, and that they won't often neatly follow the plan; two, Make yourself a useful apprentice to the right mentor; and three, differentiate yourself through specializing in your area. So, what is something that you struggle with the most?

**Jason:** I struggle with writing and re-writing long after the "real work" of a study is completed. I can be hard to stay motivated when the post-game show is longer than the game itself. A lot of my best work, including my recent stuff, only makes it to the report or conference paper stage. Being outside of academia, it is difficult to find the time or colleagues to help respond to reviews, update literature reviews and finish articles.

**Fred:** Sounds like you need an apprentice! I think following through with publishing is probably something that a lot of people struggle with, especially when there are lots of projects and things going on. The emotional cycle that goes along with writing doesn't always combine well with the persistence and hard work that goes into writing and revising a paper. Do you have any final bits of general advice?

**Jason:** Just to find questions that interest you and be prepared to look hard for answers. Keep up with trends and changes in the field, including theories and paradigms that may challenge how you learned. Be aware of what ideas stay useful over the years and which don't, and learn from other disciplines when you can.

**Fred:** I think that is great advice. It is important to be open to what is happening and to constantly reinvent ourselves, and in order to do that we

need to be willing to take risks and do what is right. I think it was Jim Collins in *Good to Great* who said that great organizations will always hire the right person even if it means making them a spot. I think that leaves the rest of us with becoming "the right person." Thanks so much for all of your hard work and for participating in the TrendSetters column! It was a pleasure interviewing you!

**Jason:** It was my pleasure. Thank you!

*Would you like to nominate someone to take part in TrendSetters? If so, please email Fred at TrendSettersColumn@gmail.com*

*Want to discuss the TrendSetters column? Use the Twitter hashtag #TechTrendSetters to join the conversation!*

## Notes

- 1 Guzdial, M. & Weingarten, F. (Eds.). (1996). *Setting a Computer Science research Agenda for Educational Technology*. Washington, DC: Computing Research Association <http://tinyurl.com/CRA-report1996>
- 2 Ravitz, J. & Hoadley, C. (2005). Supporting change and scholarship through review of online resources in professional development settings. *British Journal of Educational Technology*, 36(6), 957-974 <https://www.academia.edu/1139425>
- 3 Ravitz, J. (2002). Demystifying data about Technology Impacts in Schools. *National Educational Computing Conference (NECC, 2002)*. San Antonio, TX. <https://www.academia.edu/1854297>
- 4 Ravitz, J. (2014). *A survey for measuring 21st century teaching and learning: West Virginia 21st Century Teaching and Learning Survey [WVDE-CIS-28]*. <https://www.academia.edu/5901608>
- 5 Google for Education (n.d.). Retrieved from <http://www.google.com/edu/programs/index.html>