

Reflecting on STEM in Iowa and in MA

*(These observations are adapted from the transcript of an interview commissioned by the Iowa Council which occurred through a version of Skype in June 2014. The original is 14 pages long.)*

People refer to the STEM Initiative in Iowa various ways: the STEM Initiative, the Governor's STEM Initiative, the STEM Advisory Council. I call it the Iowa STEM Initiative. The Council is the oversight body: it governs, sets direction, oversees, inspires, communicates, so it serves all of those support functions and advancement functions, but it is not the initiative. It is less than the initiative; it is part of the initiative; but the initiative is more than the Council.

I was part of the Scale-Up program as an advisor from my experience in MA. Then I was asked to be a "disinterested" reader/rater of the proposals the regional hubs since I contributed to the design.

Establishing the protocol was the first step, and then I read all of the proposals two or three times and I rated each of these proposals against the criteria we had established. My assessments were collated with the other readers' for the final decision.

I have served on several committees including the Policy Matters Group. I worked with the committee to identify in what areas policy was needed. I didn't spend a lot of time writing policy because there are people on the ground in Iowa. The task was to determine what needs to be in place so that everybody is on an equal footing and so that everybody is paying attention to the same issues and constraints and possibilities, etc.

I have been an "informal" advisor to Jeff Weld. I met Jeff when I was working at the University of Massachusetts. Later he came to Boston for a meeting and talked to the person who is his counterpart in Massachusetts. Jeff asked if David would mind if I worked with the Iowa STEM Advisory Council as a member of the MA Council and David Cedrone said no. Jeff and I met that week he was in Boston and established a good rapport.

Iowa borrowed took some of MA's ideas, with permission and always with proper attribution. An example is the hubs. MA calls them "networks." Our networks work quite well. It's the universities in the region; it's the public schools in the region, businesses in the region working together.

The other part of the role that I've played is that I've tried to share what Iowa has done to prod Massachusetts to maintain its momentum. At this moment I think Iowa has more energy than Massachusetts in its work together as a state around STEM.

I think that Iowa came online much faster with the hubs than Massachusetts did with the networks. That is partly because there has been a lot of energy in Iowa and also because Iowa had the advantage of watching Massachusetts' efforts. I also hoped that by working with another state, which had done a little bit more a little earlier (MA), that I could help make it easier and better for Iowa.

I developed a program which allowed a stakeholder to search for a STEM program. For example if the parent of a 5th grade girl wanted to know if there were any engineering

programs available for that age and gender, she'd query the Search4STEM (the name I chose) and out would emerge half a dozen. I was thinking Massachusetts first, Iowa second, so the prototype that was developed was for Massachusetts. The parent would learn, for instance, that the Museum of Science, Boston has a terrific elementary engineering program. The search can be done online which information that can be followed up in person.

Jeff liked it and wrote it into the NSF grant which came through for Iowa. He called me and said that there was a little bit of a problem because in the meantime the Lieutenant Governor had decided to work with an established publisher on the website. I had a choice. If I wanted to work with the publisher and Iowa, I would have to leave the Council, but I might get paid. Or I could stay on the Council and not get paid, so I chose the latter, obviously. I believe they have enough expertise in Iowa!

On another dimension Iowa liked @Scale and chose to call it Scale-Up. I helped to think about what Scale-Up might look like, based on my experience here. I was in the group of the MA Council that selected the @Scale projects in Massachusetts. In Iowa I helped organize what Scale-Up would it look like and what should be done, and how might programs be judged, etc., what should be the elements of the programs to be considered

An interesting challenge is how to organize the Council itself. MA is divided in two. One is called the Executive Committee and the other half is called the Operations Board. The Executive Committee establishes policy, makes the big umbrella decisions and the Ops Board does the work, like reading proposals and helping to devise activities.

Jeff keeps everybody on the Iowa Council informed on a regular basis. That is a key to the success of the Council. Other accomplishments of the Iowa Council: getting the Council organized, the structure/infrastructure, the summits, periodic convening of the big groups, getting the website going, the hubs, ScaleUp, all are tangible results of the work of the Council and Jeff and his staff.

There have been some partnerships and projects that have developed and grown that are functioning now, where people across different sectors are working together, which is really what the point is in the end: creating opportunities to get everybody on the same page to help students to go into careers in STEM, or simply to be well educated.

Interestingly a number of women have taken leadership roles in Iowa: the Lieutenant Governor and the new Co-Chair. I think it is important for girls, and anybody else who feels underrepresented or is underrepresented in the population at large, to believe that he or she can become a professional in any profession that the person wants to. Since STEM has so long been associated with men; engineers are men, doctors have been men, although not anymore exclusively, physicists, my husband's a physicist at Boston University. They go out of their way to try to get women into physics. The more women who come forward and say, "Yes, I'll study physics," or "I'll study engineering," means we all have a lot more capacity.

The building blocks of a good STEM Initiative, in my opinion, are the same no matter what state you go to. It's the character, the identity, the special nature that are reflective of the industry, the population, the geography, that distinguishes the state: K-12 needs to partner with higher education, needs to partner with businesses, needs to partner with nonprofits; hospitals have to be involved. The museums have to be involved. The trade organizations need to be involved.

People, when they create new programs, tend to go for something that's jazzy, that's easy to prove success, because you always need support. To get support, you have something to show for it, but probably ten other people have already done the same thing, because they have the same motivation. On the other hand, geography still counts. Especially little kids, upper elementary school, middle school, and early high school, they need their hands on, particularly in science, particularly in engineering. Math is more abstract, but you can make it also quite concrete, and technology, every kid these days has a device.

So if you need are driven by geography, then replicate, don't reinvent.

STEM education and leadership are essential and both MA and IA are focusing on this important idea.

IKZ June 27, 2014