

Room 215 Session II

Facilitator: Lynn Farrin

Name of Presenter(s): John Newlan – convener, Eddie miles – convener, Jim Moulton popped in!

Topic of Presentation: STEM and digital citizenship: What critical connections need to be made between STEM and Digital citizenship? Let's Blog: connecting teachers within an online community

Participant Professions:

- K-12 Development Executive for Apple, former 3rd Grade teacher—that's where my heart is.
- Director of Maine Physical Sciences Project, UMO. We meet face-to-face with teachers and have an online community; was technology director in Milo; interested in blogging: how do you develop that community if you're the only teacher in the district? Part of the grant at the university is that there's an online community and I'm the manager of that, plus I do all the data managing. But it's really neat to see all these other teachers from Madawaska to Hancock to Steuben. We've all these teachers from all these different cultures, and they all have this same curriculum that they're piloting this year. The teachers chose the curriculum; it wasn't something that was thrown on them. So part of it is the blogging piece, just to have that online support if you're working in the classroom. But it's different if you're not piloting or have the same curriculum; it's not the same experience. That where X comes in, with the blogging piece, with teachers, there's that support—whether it's from another state or whatever. But I what I do is much different than what you're seeing as here [on the discussion flyer].
- Director at Maine International Center for Digital Learning, I put up this discussion flyer out of a kind of a hodge-podge of things that I am seeing are converging in a helpful way. Certainly the new framework for science education, in my mind, makes a much clearer statement about scientific thinking and scientific practices. One of the things that I see in terms of the way our world is communicating with each other online, is there's an enormous amount of logical fallacies and basically irrational discourse going on. I think there is an opportunity for teachers, especially STEM teachers, to push the envelope towards: let's make sure we're operating under principals that make for good thinking and scientific discourse. The other whole piece of that is other presentations we saw this morning around IT and cyber security. Cyber security is at the far other end of digital citizenship, when you have to worry about hacking and destroying and sabotaging. Another dimension is around abusive language and that's not so much centrally part of STEM, but in my mind is connected. Systems thinking, and rational discourse and using STEM to leverage how we can help the discourse to evolve and catch up to the technology.

I love the phrase, “rational discourse.” Because in a STEM environment I think that says so much; It has both the humanity side and the STEM side. That's a great term.

- Executive Director of Baxter Academy for Technology and Science, which is a proposed STEM charter high school for Portland. So, we're looking to attract 9th and 10th grade students next year to our new charter high school. We are going to be under a microscope. Charter schools are new to me, they are controversial in some quarters. Our students are going to be your future hackers and your future game developers. We are doing a great deal of work with the Google folks and the Google suite of tools. Kirn Kelly is on our advisory board and is a great asset to our organization. They're doing some great stuff with his kids, sharing stuff online, working online. Kirn works for RSU19, I think. Basically, we're going to follow what he's done in his district, where the kids come in 9th grade and build a digital portfolio online. We'll be doing a lot of work online, communicating with our staff. We put up earlier on: Facebook is open; Youtube is open. We're going to be teaching kids to use these digital tools—comes fraught with a lot of risk—how to use these tools properly, how to use Facebook in an education setting, how to use Twitter, how to use whatever the next tool coming down the road is. We want to be out there out front, using these tools and using them responsibly. And at the same time we're a charter school, if we do have some kid that hacks into the Pentagon and launches a missile on Iran, we have to know how to address some of these really serious breaches of digital citizenship that we're likely to come across. Too often in our traditional public schools those instances of security breach or bad online behavior are simply ignored, to be perfectly honest. They're ignored and not dealt with, they're swept under the rug. These kids, they're out there; they're doing some stuff that's not OK online. I think it's our moral responsibility as the adults leading these kids in the 21st century that we have to have a sensible plan in place on how to deal with some of these breaches. Now, as a charter school, we could theoretically get rid of them perhaps more easily than your traditional public high school. That's another issue that we're grappling with. I'd have some experience with some pretty serious breaches of digital citizenship a few years back in one of our larger school districts that opened my eyes to how serious the breach of online security files can really be, how we deal with that aspect kids' online behavior and students online behavior. There's a lot of issues right now about what is the appropriate level of online communication and contact between a teacher and student, and that is an issue of concern for us: where that line is. That's why I'm here.
- My name is X. I'm from Boothbay Region High School. I teach a variety of physical and life sciences. This year we gave out I pads to our 10th, 11th and 12th graders. It's been wonderful, to be honest, fantastic. We worked one-on-one prior to that. But with this has come a variety of different digital citizenship issues. I'm not "admin" but we have a lot of conversations with staff on how to address these issues and it's very new to us. So as things have happened, new things come on the radar. It's been an interesting few months. I would say mostly positive, very few really big incidences. But what is our role as teachers in supporting their journey of how to use these tools properly. Of course, the first few weeks, months, all they want to do is play. So the challenge for us is to integrate

it into our curriculum so that they're using it in the classroom for meaningful practice and not just try to sneak in their games under the table. That's why I'm here.

- My name is X. My background is I'm an electrical engineer and have my own business. I sold it in 2002 and retired for a while, but I didn't really want to stay retired. I started doing tutoring, math and science. Then last year I went to Portland (?) Academy's head master, who knew I was on the board of trustees for a while, and I asked him: how much are you doing with computers in the classroom? And he said: not enough, can you help us? So I said, yes, I'll come aboard. I started in September. I have 6 students, 6 boys, 7th grade in math. I'm trying to do as much of the class as possible on computer. Ultimately, the entire class on computer. I've got good contacts at WPI and UMass and they've been doing a lot with intelligent tutors, so ultimately if this goes where it could go, I'd like to create a virtual learning center. Whatever we learn we try to bring out to the other schools. Working with UMass and WPI to try to get an intelligent tutor system working that can teach middle school math. We're not using I pads, but we can explore that.
- I am a teacher/librarian in South Portland, and part of that role is a tech integrator. So, I'm teaching digital citizenship quite a bit. In the library you're in this place where you're cross-cutting across all these different disciplines. Part of being a digital citizen is participating effectively in online communities. I also think part of being a good scientist is being able to participate and share your learning really well. Taking courses not just on what are the wrong things to do online, but what are the positive things that we have an obligation to do online: sharing our learning and discoveries online and how to be positive citizens and build a positive footprint for ourselves online. And then the new regulations for the CIPA and digital citizenship; there's been a lot of conversation on who's in charge of that. It's really everybody's responsibility across the curriculum.

Everyone's a literacy teacher.

Yes, it's a 20th century skill...

- I'm X and I'm probably in the minority today. I'm an English teacher at Granite Gloucester (?) High School. And I'm here in support of colleagues who will be teaching physics and math and the STEM program. We're inventing a technical writing course with our STEM program. I'm here for similar reasons. I'd love to for them to be able to participate and use technology in a great way. We put that in front of them. We certainly have digital citizenship issues but I want them to be good users; I want them to be literate in a good way. If we're cultivating these thinkers, this habit of mind, how are we not sharing it.
- I'm X and I'm here for a lot of the same reasons that teachers are here. I teach 8th grade in Falmouth Middle school. I switched 3 years ago from 6th grade, which is on the other side of the digital divide, to 8th grade, where the teacher handed me the curriculum on a pen drive. It was like: Oh, OK! So I was really just thrown into it.

But I have seen mostly positive things going on and feel often I don't tap into those positive things enough and that the kids are always one step ahead of me. That's why I'm here.

- My name is X. I manage marketing and communication for a company called Tilson, which is head-quartered in Portland and we do large scale IT and telecommunications infrastructure projects, as well as IT and information security consulting [infosec]. I'm also a self-proclaimed social media guru, or junkie. One of the things I've found interesting, just in the introductions, is hacking. I have a masters degree in French and international relations, so suffice it to say, I knew nothing about tel-com when I ended up at this company and got talking to a lot of our Infosec guys and asked: how did you get into that; what was your career trajectory? And they pretty much all said: well, I took that computer 101 class and got through a year's worth of curriculum in a month. And the teacher would say: well, just go do something with the computer. So the hacking thing, while certainly a negative thing, is interesting and brings up the question: how do you engage those kids that have the computer skills. You don't want to be like that 16-year-old hacked into some of the CIA's databases, but at the same time, this is a really fantastic skill. We're seeing a huge amount of increase in business with IT security with HIPPA: all these hospitals putting all of their data into the cloud. Those are guaranteed jobs, forever. So, my question is how do you work with these kids to channel that productively. And on the blogging or social media side, it's key to look at it not as the blog in and of itself. But to look at it as a media, and not just limit yourself to blogs. When I showed up at Tilson, my boss said: I'm never going to be on Twitter because I don't care what you had for breakfast. He now uses it more than I do. So it's also a question of identifying those communities. From personal experience, I have some random interests. I'm really into Formula One, example. None of my friend in Maine are, but there are fantastic people on Twitter and Tumbler, which is a blogging platform, who are really into Formula One. And it's only because I engage with those people in those networks that I am able to keep those interests going.
- I'm X from the Gulf of Maine Research Institute. I work on the bioscience program. And Emma basically taught me to tweet today! I came because when I read the flyer I thought in bioscience we try to build a community practice with students and scientists and citizen-scientists and educators. I'd be excited if we could get teachers and students to be more engaged, online, in our blogs. The blog right now is generated by our staff. We've invited the community to create blog posts; we have a form for teachers that they generally use only in association with institutes when we give them assignments. When we make them! We say: you want your stipend... Then we have a curriculum bank, in which teachers do share. X, here, is one of the teachers who has shared in our curriculum bank.

It just takes time; I've given my stuff to other people because it takes time, that's the thing. It's all a time thing.

But I do worry, because I've connected teachers to mentor each other over email. Saying, oh, would you like to work with this teacher over email, to give advice? And they'll email back and forth, and that takes time too. So, with teachers it seems that there is a little bit more of reluctance, this is my perception anyway, to participate in that open community. But isn't it interesting that students are all about commenting, all over the website and other students' work. That's one reason I am here. And the other: in the last session I was in, ways to have productive talk and argument—discussion--came up, and we were talking about in person, but it's so connected to the way students, the models and the language tools and experiences that they're using to participate in conversations online.

To add to this, I think a lot of adults, and I know I struggle with this: you've got your professional online life and you've got your personal online life. Teachers, working in traditional K-12 settings, are given a very strong message to be very careful. And sometimes, like in the district that I just left, had a strict policy, passed by the school board, that you were not to have communication, online, with your students. Period. That was a school board policy. So there's a lot of school culture out there that says: shame on you, no, no, don't go there. So as an institution, like the Gulf of Maine Research Institute, you're somewhat freed up. But I guess my recommendation would be, if you want to engage teachers and kids and adults more, go where they are—which is Facebook. So if you want to engage folks, your own independent blog, is probably going to wither and die out there on the web.

See I might disagree with that because I'm a fan of GMRI on Facebook and it's great, but one of the reasons it's great is that it's broad. It's saying: don't forget that our next lecture is on Wednesday, or here's a photo of the 30 teachers we just had in for training. The challenge of trying to take something really specific like this on Facebook is that if people start talking at a 500-foot-level about very scientific things, I'm going to tune out and I'm going to un-follow.

But you can create different Facebook pages for different aspect of your work. Facebook is where the communication takes place, it's where the adults are...

But a non-profit is not free from policies and other things.

I guess I'll put a question: I'm always thoughtful—the term, “digital citizenship.” We will elect a president in 2012 and there will be the opportunity to ask questions of candidate, in which the only way in which a citizen can get those questions through is through Youtube, is through digital means. So, do we perpetuate a myth by using the two terms, “digital citizenship” and “citizenship.” Is there such a thing as...can it be ignored? Can you fully engage in American 2012 in a public democracy and ignore the digital component? Yea or Nay?

I don't think you can be fully engaged, but at the same time I think it's one of those things where it's so easy to try to separate things. Digital citizenship does not exist in and of itself.

Then why do we use the term? Do we use the term as a bunker from which we can...

I think we use because the idea of taking on something like "good citizenship" is way too massive. I think people try to drill things down. I think if you have issues with people not practicing good digital citizenship, I'm willing to bet that they are not practicing good citizenship in general. And the digital side of it is just another means to an end. It's not because it's digital that people are practicing poor citizenship.

Yes, to me it's more like, in the K-12 setting, teaching kids that they have a digital reputation and a digital life that is just beginning. Like, I have a 13-year-old son who just got a Facebook account. So, teaching them how to positively put themselves out there is a digital skill that we need to teach. I think digital citizenship is the right term.

But do you also teach him the importance of being a good neighbor, a physical neighbor?

But in my way of thinking, there's the digital component of citizenship, because those are particular skills that are new, rather than teaching him to shake hands and make eye contact.

But they're not new to him, they're the way the world has always been to him.

But they're not; he hasn't had a Facebook account..

But he's surrounded and living in a culture...

True, but he is not a kid who's been online communicating and posting things about himself in any meaningful way up until he was 12 or 13 years old.

My example would be, I look at the kids I grew up with, and I graduated from high school in 2004, so when we were in elementary and middle school, that was before caller ID was introduced. And I would guarantee that the kids that were prank-calling back in those days are the same kids who are posting things on Facebook about other kids that they really shouldn't. I think the way that people show those behaviors may change, but I don't put anything on my Facebook page that I'd be embarrassed to tell my grandmother about. But it's not because it's Facebook...

Or that your gram is especially hip...

It's interesting, I think what's you're getting at is that "digital citizenship" is a term that is sort of for adults.

I see people hiding behind it, but it's something that could be taught.

But as teachers are adults. And these are some tools that are not necessarily integrated into some of the thing were doing. I think it's still very useful to talk about; there's this set of skills and tools. But ultimately is that the future? Is there going to be a digital citizenship class?

The digital will be dropped from it [the title], but it will still be a part of it. We're getting there, but I don't think we're there yet. I think the term has so many dimensions and really we could have a great activity and put the words "digital citizenship" on the board and had one of those chalk talks. And we would have found that it diverged into lots of different directions. But for me the most interesting one is related to what we've been talking about, which is around ethics. Which is really not quite the same as my permanent digital footprint which is kind of maybe potentially embarrassing or harmful to myself. Ethics is about what's morally correct, not what's silly or inappropriate in a way that personally harmful. There are so many deep opportunities for teaching around ethics with the advent of the social media and other kinds of communications we have. And so many more opportunities to use reasoning that is not the kind of reasoning we that want to hold up as the way that adults need to need to communicate with each other if we're going to have a successful society. And that's where I think that STEM, or the new science standards framework and scientific or rational discourse is a great opportunity. We've got to have people making arguments about what they think is right and wrong in the world that are easier for people to digest because they don't spur a kind of defensive reaction. You get into a defensive reaction and the next reaction out is just going to increase the defensiveness, and suddenly we're spiraling down into a toilet of discourse. And we're not going to make enough progress fast enough if we do that.

I've been watching my 10-year-old get online and having some of those same exact experiences. We have to let our 10 year-old get online in school so we can let them have those experience of not understanding each other, of being too blunt, or seeing that there's multiple interpretations for word or response that someone has given you. I think we incorporate that into schools because there are so many more possible communities now and scientific conversations. You can talk to an expert in a different country about something you are interested. You have to be really smart about the way you're going to talk to that person, and it wasn't an opportunity before.

One thing is that if you aren't modeling and having polite conversations where you are using real language tools to communicate effectively and respectfully, I don't see how kids are going to do it online. I don't see it as two separate things. I also think that there are so many opportunities for students, tools that aren't Facebook that show student the utility of social networking and having those conversations. Also, there was a recent article that talked about how a guy took off public commenting from this big news site. The whole point was that the commenting is garbage. People don't know how...

The Portland Press Herald suspended commenting for a while.

This is sad, but it's also saying: this is something to address. Let's figure this out.

I'm just an optimist about this really, because I think we always have a problem with rational discourse. This is not a new problem. It's really been a disaster for all of human history. It's only ever been a really select group of people who have been really good at that. You think about the way the Senate was supposedly supposed to operate until about 10 years ago. It was this deliberative body, and they kind of hung out and they were friends. And they could get into these committees and have this kind of rational discourse. You know we really don't agree on this, but we got to find a some way to talk about this and if we were using irrational discourse, with all of these ad hominem attacks, we would never have gotten anything done in the Senate, which is what's happening now, right?

But what I think is happening is that we have the artifacts of this bad discourse so much more abundantly in our face through the comments on these new websites and whatever, that we actually have the need more than ever to get better, our students and our selves. But we actually have the opportunity because the artifacts are so much in our face. I think what's going to happen is that there's going to be this groundswell of support; we're going to have to really make logical reasoning and rational discourse so much more a part of the curriculum that it's embedded at every age level. And we may get to a place that we have a much higher standard of expectation. So once in a while you'll see in those comment things, someone will say: c'mon people, let's get back to the real argument; I thought so-and-so made a really good comment about this.... And it really tries to get things back, but, boy, they're fighting an uphill battle because they're in the minority. I think as we get more and more people unwilling to accept that kind of comment online, we may see improvement. I know I'm "pollyannish" about that, but it's the only way I can operate in the world.

And I have to stop us and do these three questions. The first question is: how does this conversation inform our understanding when we do STEM teaching and learning well?

I think that in classrooms and spaces that we're using things like the talking moose from Ray's Head Science, creating those norms at every opportunity we can. Then we're giving everyone those tools, where 20 years ago they wouldn't care that tool for statement, for productive conversation.

It's been a rational discussion. We've walked the walk. There have been different ideas that have come forward. It's been a process.

I think certainly in STEM classrooms, for teachers to coach the practice of rational discourse, that's certainly been going on a long time. For for STEM classroom, that should become a more prominent and common feature where teachers help students, instead of ignoring the comment that was a little bit off, say: let's work on the precision of that. Find the good stuff that's in there and pull away the stuff that causes defensive, negative stuff that takes it down that hole.

Like you said, not sweeping things under the rug, not pretending you didn't hear, but using it as an opportunity to show that there are tools to express and idea respectfully.

One of the things I used last year, right before I left my previous position, is something called head-moto. And Head-Moto is a little kind of social network you can set up. I used it with a bunch of kids in a behavioral program; it allowed them to get online and comment. Of course, it was full of inappropriate—not terribly inappropriate, but “hey, what’s going on? wassup?” that kind of commentary that’s meaningless dribble that finds itself online all the time. But after a while, with working with the kids and getting over that newness of it, they would say: oh, hey, it’s like a little Facebook, we’re on Facebook! You can teach them. I disagree a little bit...I think in this digital age...the Press Herald and Bangor Daily have unfortunately had some articles lately where people can just lay in with their comments. And it’s “hyperdude1”, just an anonymous account that someone’s created online to basically “tee off” or go “Glenn Beck” on somebody. Just throw @\$%& at the fan. We’ve got to teach kids from an early age, you get online, even though you can be anonymous online, that’s still not OK. The difference is to be able to hide behind some kind of anonymous user name. When you’re in a room like this, you’re face-to-face.

You should assign the cover article of Wired magazine this month for your kids next year. It describes the NSA facility that’s being built in Nevada that will intercept everything, scams. And it is hexa-bytes of data. I use the “way-back machine,” when you want to talk to kids about the importance of this, and talk to adults. It is [archive.org](http://www.archive.org). I’ve used this for years around the world. This is dnahack.com; the web site is no longer there, but oh my god, this is the gathering site for amateur geneticists who are buying lab equipment off of ebay and centrifuges and doing things with them that you used to have to have a million-dollar grant from NSF to do. There are PDF directions on how to transform ecoli, freaking ecoli in your garage: go ahead see what you can do. Send this in, maybe you’ll be the winner! And then read, the chief scientist at SunMicrosystems wrote an article about why the future doesn’t need us, because what geneticists are really worried about is what they refer to as the “gray goo incident.” This is when somebody, somewhere pours something down the drain that shouldn’t have bottled, that as we work with material, that oh my goodness, be concerned. The critical importance that it is citizenship at all levels. This is still here to show kids. If you go to [archive.org](http://www.archive.org) and go to maine.gov or state.me.us and go to September 11, 2001, you can see that the state’s website was updated twice that day. You can see it pre-9/11 and after; they’re both still there. It’s great history to show kids, to show them that everything you put up, it doesn’t go away. It’s zeros and ones. Your mom and dad don’t have to keep it in a Tupperware box under the bed; it is still there. And I’m serious about the article in Wired, if you want to know; it’s not going away, hexabytes of data.

I have two more questions....”What do partnerships that support students look like?” I don’t know if you can answer that one. We didn’t really touch on partnerships in this conversation.

I think they take them seriously. We have kids in that partnered with Auburn; they had an institute around the iPad in the elementary grades. Auburn middle school brought a team of kids that Tweeted the entire event: stunning results.

And one thing I would say, if you are a teacher and you're looking to start using Twitter and blogs, I would reach out to your students. I would be shocked if you didn't have—even in middle school—a few kids who know how to use it, and get it.

They know how to do, but I would question the piece that was so important which Karl Boochantini [?] did so well...because what Tweeting of a live event really is, is note-taking. It's an English, it's a language art.

I'm on a board that's called "Propel" which is the young members network that's affiliated with the chamber of commerce in Portland. And I have friends who are on the board who will say: you know I started a Twitter account, but I just don't get it. It's just like with blogs; people usually fall down. It's all about communicating and engaging. It's not just saying: I had an orange for lunch, but it's asking questions and sharing contacts. I was on vacation last week and I used my social media outlets to share photos; I was in Istanbul. I had this really crazy meal. I had this baked potato, which is a local classic meal, and they fill it with about 60 different kinds of things. It was really bright and colorful, so I took a photo of it. A friend of mine from college, whom I haven't communicated with in 4 years immediately commented: oh my god, I can't believe you're in Istanbul; I lived there for a year and I'm going to send you a list of 10 things you absolutely have to do. And that made my trip!

It enriched your experience.

OK, speaking for someone who just left the K-12 system, went to the principal of the school and said: do you want to set up a Twitter account for the school? So that when the kids, the 8th graders, go on their trip to D.C....He said: No, you are not to do that; you are not adding that to the teachers' plate. Teachers do need to be careful. In the real world, in the K-12 system we live in, the leadership...The folks in this room, these are all the believers. But it's the principals, the superintendents that have to see that there's value and lighten up and do this.

And are teachers able to create...And I'm even saying do it for yourself or for your kids, but I used to read The Press Herald, the Wall St. Journal, the Financial Times. I had like 7 newspapers and I would go to their websites every day. Now I go to Twitter.

The point I'm trying to make is: yes, these are very powerful tools, but teachers working in isolation can't necessarily go ahead and make those decisions in school cultures.

But a teacher could have a Twitter account that would help—not even bringing it into the classroom—that would bring a wealth of information and communicate with teachers at other events. And I would think from a principal's perspective, or even my boss, when I first talked to

him about Twitter, he said: yeah, whatever. When I showed him my Twitter account, here's how I use it, here's all the conversations I have, here's how I connect it all to LinkedIn: you know that really awesome person we just hired? They saw it on my LinkedIn account and reached out. Then that was really convincing, and I think it's really helpful if you can show the applications and show the benefits instead of just saying I want to do this social media mumbo jumbo thing...

You used EdMoto, which I think is an awesome tool. We have two teachers, one up in Vinalhaven and one in Falmouth and their students work together using EdMoto. So I think that's a cool tool that maybe isn't so scary.

It's a wall breaker...

You could invite collaborators from the outside. You could do something...

You decide who can come.

Yes, you could create a more relevant context for students who would be more motivated to practice those communication skills, so they're not just all "oh, hey, yeah, what's up?" [online] They're actually talking to a real professional from some really awesome company who makes magic carts out in Seattle or whatever, and I can connect you with someone who works there if you want. You could find some way of connecting them with people they want to impress, because it's probably not you, or me. It's going to be somebody else. It doesn't have to be Twitter, it could be some other slightly more controlled network.

It's critically important.

I'm going to let us wrap up. I think we have enough for the last question; it was about different roles. I just jotted down: thinking about finding value, working together to make decisions that fit your situation.

Well done! Brava, brava!