Excerpts of Interview with Teacher T:

This Interview took place on a Thursday night at 9 pm Ontario time. Teacher T lives and works in Edmonton. The interview was done as a video chat on Google Hangouts.

The interview lasted approximately 26 minutes. The screen recording was done with Filmora by Wondershare and Google Docs was used to with the voice typing feature to help record the written notes.

Teacher T is a certified teacher in Edmonton. She spent approximately 6 years in the regular classroom and 7 years in a self-contained special needs classroom. For the past two years, she has been an Emerging Technology Consultant with her board.

In the table below the questions asked by the interviewer are in the right-hand column in green, excerpts of the interviewee’s answers are in the right-hand column in black. Analysis by the interviewer are in the left-hand column.

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| Questions and Excerpts | Analysis |
| If you were to focus on learning and integrating one new program or application related to math or science, which program/application would you recommend in terms of having the most impact on student learning within the classroom? |  |
| Up and down my number 1 answer without even thinking about it is coding…see it's becoming our way of life, it is a language we all need to learn to speak and is foundational to mathematics and science literacy.…The best place to start is The Hour of Code website they, have it broken down where you can filter subject area, grade level, ability level, device type and they will filter for you what apps or web-based programs work for you. It contains tutorials so that the teacher doesn't have to feel like they need to be the expert. Coding is just one of those powerful, powerful foundations that you can use across anything. You have to code, code code! | When Teacher T immediately spoke of coding as a focus I wondered how many of the teachers out there would have shuddered and said no way? I think most of the interviewees in both the case studies and interviews posted on the blog by students would have just shut down. What I like about Teacher T’s response is that she explains how to demystify coding and how it can be made easier for teachers. That learning along with your students is not a bad thing. |
| Can you share how your assessment of student learning has changed with the integration of digital technology into your math or science classroom? |  |
| Yeah 100% if we're going to move to using digital Technologies in math and science we cannot just take the learning or even the teaching of it using new digital technologies and then completely rely upon the traditional assessment. …. You know what we've done is sucked the love of learning out of our students in math and science. It should be those two subjects that we love because it's real life learning, it's Hands-On learning, it's problem-solving and we have reduced it down to a fill in the blank answer on the line. If we're going to use digital technology then we need to use it properly and assess properly and there's no better way than just plain and simple documentation. Video and images, capturing contextual concepts in the moment. In the moment learning and it's so simple to do whether that's a simple screen capture of something that they have done, or using an app say show me what you know. …This can be done for higher-level projects; they can also be done to demonstrate everyday learning …Higher level thinking cannot be reduced to a fill in the blank | I think Teacher T hit the nail on the head with her ideas on how assessment needs to change. The problem is in the everyday classroom it seems to be changing very slowly. Of the other three people, I interviewed all said that they still mostly rely on paper pencil assessment. Two of the three said paper pencil assessment was 100% what they used (both also had no intention of changing). While Teacher T in the interview mentioned some great ways to document learning in the classroom I would like to take it one step further in my classroom. I think that Eric Mazur’s research on group, open book assessments where they solve real world problems is awesome. Why do we have our students memorize rote facts? In the workplace now and especially in the future problem solving, critical thinking and team work will be the most important skills. No one is going to tell their employee to work on a project but only use the facts they have in their heads. They will be expected to use all the resources they can access to get the job done well. |
| What do you see as a barrier to teacher education in technology? |  |
| …. I see the number one factor is we rely on this lovely excuse of “well I did not learn that in my teacher preparation courses therefore I will never need to use this in the class” and we put everything on teacher preparation. I call that out because especially in the realm of Technology with the speed at which technology is changing there's no possible way that we can expect it to be part of our teacher preparation courses. …What's more important is the technology pedagogy. Those big things we need to look at like digital citizenship. We need to look at representation of learning. We need to look at technology thinking in all those student teachers…. | While I appreciate what Teacher T is saying, I have some differing opinions. I agree that we need to first and foremost arm all our teachers with the skills to properly teach digital citizenship and technology pedagogy. Personally, I think it also beneficial to teach them some programs that they can use in the classroom, if for no other reason than they understand they are capable of learning and teaching with technology. Yes, the programs may change but the confidence to learn it has been instilled. |
| What about your role as a tech consultant? |  |
| … I cover my bases for my learners. I offer professional develop workshops, … I create online resource materials that are always posted and available. I have a YouTube video channel where I'm posting weekly lessons and ideas…. I need to make sure that we are promoting and we are not apologizing that we need to have 21st Century Learning in our classrooms. That technology is not an inconvenience or optional or block four on Friday.  This is part of our everyday learning and if we create those options then we will draw in more teachers. I have to make sure that we really are reframing professional development. … In Alberta Thursday afternoons are considered professional development time, we don't have students so we go into schools and we put on workshops we are hosting big District workshops at those times as well. I go in to schools for drop in sessions and I am getting a completely different demographic of participants. This is the one that my teachers are coming to, the ones that you know don't really open up the doors of their classrooms. And it was really interesting to see the different people because  this is a safe and smaller way to get them support. On the other hand, I know that there's some people I will never reach that way so I have something called do-it-yourself learning where I have a lot of hyperdocs where I create a digital material and I am always adding to it and people who want to be a self-learner but don't have to go through the Google search for finding the resources. I have created and filtered and put them together and our do-it-yourself site and our YouTube series is incredibly popular. I am doing these weekly webcasts so people can watch me a hundred times but they can also play me while they're on their computer doing what I'm saying and push repeat and push pause and go back and so that has been a real plus. | The programs offered by Teacher T in her role as Emerging Technology Consultant seem like heaven. I know that no such training for teachers exists in my district and from the interviewee responses from all students and class videos it seems as if it does not exist in many other districts either. Not only do they not exist, often the administration does not even realize how much they are needed. I know I will be taking the examples of Teacher T’s programs and in servicing to our superintendent as an example of what must be done if technology is going to be effectively implemented in all of our schools. Sadly, I do not hold out much hope for our board to adopt such a program of create the role of emerging technology consultant in our district. |
| What is your most important message to teachers? |  |
| I always try to get across the idea of “why is learning tech optional”? Our boards take on new programs and new initiatives and whether they like it or not teachers do it, because they are expected to. Why is learning tech optional? … If someone doesn’t know where to start it is easy follow the ISTE standards for students and the ISTE standards for staff. Take one step and suddenly you will realize this isn’t something that will go away. We need to learn tech to be effective educators. | Teacher T got me thinking on this one. I found myself totally agreeing. Why is optional? My only answer for that is there isn’t the training available to most teachers to learn technology without incurring personal costs both in money and time. |

Synthesis of Interviews:

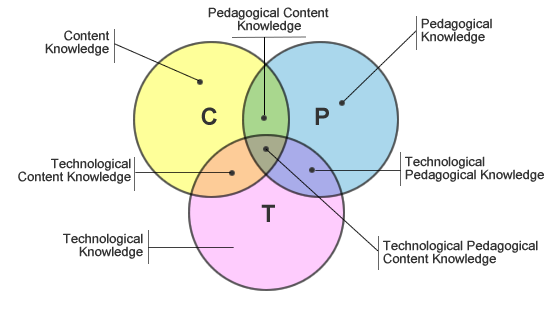
After reading all the interviews posted and engaging in several discussion threads I started to think about what do we do with all this information? It is remarkable to me that several of the barriers to using technology in the classroom resonate through many of the posts. Our interviewees were of varied ages, genders, experience level and current job placements, yet the underlying issues remained constant.

Rather than dwell on the things we can all plainly see are barriers (hardware, bandwidth, teacher training) I wanted to start a discussion on how we can improve some of the problems we encounter. I realize I may be naïve in thinking that if we can decide on some improvements we clearly see as necessary we can start things moving in the right direction.

These are the things that I took away from our interview posts:

1. We need better in servicing and training of staff at every level in order to have teachers feel comfortable using technology WITH their students. (As Dana stated it would be nice if we could just call the Prime Minister’s office and say, “hey we are teachers across Canada, we have a Wi-Fi issue that needs to be addressed or we can’t use this technology in our schools”. Unfortunately, education in Canada is governed at the provincial level and sadly I doubt Wi-Fi is an issue they will all get on board with. I also think Stephanie’s Mentorship plan (including mentoring technology) is a super awesome idea and I hope it catches on with every school district. The mentors in our schools never deal with technology other than here is how the report card works.
2. We need teachers to value technology not as a tool to do what has always been done but to do things differently and engage students. As I mentioned in a previous post there is medical evidence emerging that clearly demonstrates children’s (digital natives) brains are wired differently than previous generations. (Levitan, 2014) if we do not change how we try to teach these students, I fear they will become a lost generation, stuck between old teaching methods and a new career world. I recently read a book by Ross Greene (2014) called Lost at School (Why our Kids with Behavioural Challenges Are Falling Through the Cracks and How We Can Help them). What I kept thinking about as I read this book was that yes we definitely have students with severe behavioural issues in our schools, but is that number rising because of what many on my staff would like to call poor parenting, environmental issues? Or is the number seemingly rising because we are failing to engage them on the level they require?
3. It is time to blend our teaching with Problem Based Learning (PBL), Genius Hour or 20% Time and allowing our students to direct much of their own learning in essence allowing them to choose the differentiation that works for them. We need our students interacting with their learning. Trying, failing, trying again and understanding what perseverance is. If you want to learn more about these processes I have three recommended reads: Learning by Choice (by A. J. Juliani, 2014), Pure Genius: Building a Culture of Innovation and Taking 20% Time to the Next Level (by D. Wettrick, 2014) and inquiry and Innovation in the Classroom: Using 20% Time, Genius Hour and PBL to Drive Student Success (by A.J. Juliani, 2015). These three, easy reads helped demystify the PBL process for me.

When I consider the TPCK framework as described by Mishra and Koehler (2006) and apply my understanding of both TPCK (see basic TPCK visual below) and PBL’s I see the perfect merging of theories.



The use of PBL’s in Science and Math provide the perfect opportunity for educators and students to hit the sweet spot of the TPCK Venn diagram incorporating all facets of Content, Technological and Pedagogical Knowledge.

1. We need to recognize, as mentioned in one of the posts, that we are attempting to prepare students for a future none of us understands. How can we do this? The answer to me is that the material we use today is only a vehicle that we use to help our students learn to become innovators, problem solvers and critical thinkers. Already most employers are looking for employees who have these skills over those who just achieved high grades in an outdated education system. My final recommended read is Creating Innovators: The Making of Young People Who Will Change the World by T. Wagner (2012). Although I am only half way through this book I am already thinking differently.

As I continue through ETEC 533 I would really like to look at using PBL’s in math and science, as well as incorporating the use of makerspaces. Makerspaces allow a classroom to be vibrant and pulsing with excitement. A makerspace classroom lends itself beautifully to PBL’s as student work on their desired project. For me personally MET has changed me. I lament all the time I spent as that teacher who did what was always done and thought a quiet classroom was a good classroom. My thinking has taken 180 degree turn, I want my students up and doing and thinking and trying and failing and trying again. Helping each other solve problems and most importantly excited by what they are doing.

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