

## **Technology Educator Vision Definition**

### **Original Post**

I looked at the status of technology and technology integration in the K-12 arena by reading the report of Teachers' use of Ed Tech in US schools from 2009 since I work in providing professional development to educators. Since this report was generated in the year of 2009, in my opinion, it is outdated. This report identified technology as whiteboards, response clickers, cameras, projectors. As far as Web 2.0 tools, the technology consisted of chats, wikis, and blogs. This report looked more at the hardware that was accessible within public schools but not at the integration of the learning taken place within the classroom. I kept thinking of the quote from the HJM Book that states, "Technology cannot teach students. Rather, students learn as they use technology (p.16), and this report is more about the technology (hardware) within the classrooms. The report shows that the ratio of computers to students is 3-5 students per computer and I actually found that surprising as I did the percentage of teachers using technology. Based on actually talking to schools in Northwest Indiana, most schools still have technology labs set up but they are not even close to 1:1 ratio or even 1:2 ratio in the classroom due to funding. According to the National Center of Education Statistics, 47-61% of teachers are using technology, but yet again that's just the hardware so I guess if you are turning on a projector, than technology is being used (p.5). It would be interesting to do this report again and put in more specific questions on the survey such as how are the students using technology for 21<sup>st</sup> Century Skills, rather than looking at how teachers are using technology for email, communicating with parents, and posting grades.

The Horizon Report, K-12 was a very interesting read and in the report it is stated that the upcoming technologies to be used by educators and students will be cloud computing such as Google Apps within the next year, gaming in a year or two, and learning analytics will be three to four years (2011). I found it interesting that the Horizon report states, “technology can and should support individual choices about access to materials and expertise, amount and type of educational content, and methods of teaching,” but our technology is not there yet to support student learning (p. 7), or have students create their own personal learning communities (PLEs). Open source learning and using mobile devices will be also sources of technology integrated with student learning. The use of learning analytics and data mining of students will become huge for districts in order to use it to differentiate instruction and formative evaluations based on data collected from the students (Horizon Report, 2011, p. 28). The few administrators that I have talked to in the K-12 realm would like to utilize data-mining but know the costs are high to employ. Some colleges and universities are using this technology now.

Also, another report I viewed was Keeping Pace with the K-12 Online Learning, An Annual Review of Policy and Practice. The trends in this report show that more online and blended learning is being used by districts, and when they utilized online learning it is mostly blended. Also about 40 states have virtual schools in place but some are faltering due to lack of funding (p.5). As stated in the Horizon report above, the Keeping Pace report also discussed how open source education will take hold for educators and students to access online courses and content. Keeping Pace shows state by state how they utilize online

learning and how it will be valuable to special education students that can access courses from anywhere if not in the physical classroom.

In order to integrate technology in a meaningful way by having students use technologies to support meaningful learning. In order for learning to be meaningful for the learner it should be active, constructive, cooperative, authentic, and intentional (p.3). The technology has to support the learner's goals and be engaging not just hardware within the classroom. Students would take the lead of learning with technology with the teacher as a coach (partner) or a "guide on the side." Technology should not be used as another means of lecturing or becoming a "talking head" to the student but rather be a partner to the student to relate to real world settings. Students would help take a lead in their own learning by constructing new ideas with various forms of media, communicating and sharing ideas with peers, and evaluating and analyzing data (all skills needed for 21<sup>st</sup> Century Learning and ISTE standards). When teachers integrate technology they need to facilitate the technology and know when to utilize it in their teaching but they do not have to be the master of the technology itself. This represents that the teacher is "a guide on the side" and it's represented when Mishra and Koehler added it to form TPACK (technological pedagogical content knowledge). Students need to actually utilize technology to learn.

Also in order for teachers to integrate technologies in a meaningful way, they need to have the proper training on how to foster the learning of students utilizing technologies. For example in the research by Guzman and Nussbaum, they state that teachers should not be trained for professional development on the uses of technology for information searches. This paper also states how network and equipment alone cannot solve educational problems but if teacher were trained on how to incorporate and plan for the use of technology tools

within the classroom to promote learning (p. 454). Teachers need to be trained on 6 domains: instrumental/technological, pedagogical/circular, didactic/methodological, evaluative/investigative, communicate/relational (real world), and personal/attitudinal, to integrate technology. When analyzing these domains for teachers, they are very similar to the 21<sup>st</sup> century skills for students such as being relational, evaluative and investigative, and methodological.

### **Revised Post with Changes Highlighted in Yellow**

An exemplary technology educator has students learning new concepts while using technology and infusing 21<sup>st</sup> century skills. It's important as an educator to decide what it is you want your students to be able to do in order to create the learning objectives. The learning objectives should be aligned with the technology being used and also assessed with formative or summative assessments. These summative assessments can also be project based and measured using a quality rubric. It is also important for the educator to teach learners to be responsible using technology such as explaining how data is stored on all searches done with the web browser, referencing websites and images for correct citing of material, and being responsible with technology such as not using technology such as texting when driving a car as what was referenced in the PowerPoint on Cybersecurity for Educators by Bob Evans. I do believe it's important for learners to utilize technology in a student directed lesson whenever possible as it allow them to learn more than if the teacher directed the lesson. In fact when I was researching my 7 things, and working on my final project, I learned more in a few weeks than I would have if it was a more controlled, restricted environment. For example, I learned so much about the flipped classroom, TED-Ed, podcasts, audio formats and when to use these audio formats. The barriers that will exist for educators are the limited internet access that they are allowed to

incorporate within the classroom. Many restrictions exist such as fire walls, and locked websites so it's hard for students to have total control in exploring new technologies. Educators will have to be organized in order to be able to list internet sites that the students will be allowed to access and provide it to the technology administrators. Then, the educators have to hope that the technology administrators allow access. The other barrier to technology is budget constraints. Educators can find free tools on the Web but it does take time. Hardware such as computers will cause more money concerns as many schools do not have a 1:1 ratio of computers to students.

My original post included reading the required articles and incorporating those articles into the vision of a technology educator. Hindsight, I should of put more of my opinions and beliefs rather than discussing the articles. Anyway, my original post is below with changes or comments highlighted in yellow:

I looked at the status of technology and technology integration in the K-12 arena by reading the report of Teachers' use of Ed Tech in US schools from 2009 since I work in providing professional development to educators. Since this report was generated in the year of 2009, in my opinion, it is outdated. This report identified technology as whiteboards, response clickers, cameras, projectors. As far as Web 2.0 tools, the technology consisted of chats, wikis, and blogs. This report looked more at the hardware that was accessible within public schools but not at the integration of the learning taken place within the classroom. I kept thinking of the quote from the HJM Book that states, "Technology cannot teach students. Rather, students learn as they use technology (p.16), and this report is more about the technology (hardware) within the classrooms. I still believe this is a good quote to guide educators. Many educators still use a tool in the classrooms but they need to give those tools to the students to use. The educator should just be the facilitator and have students be in control of their learning. The report shows that the ratio of

computers to students is 3-5 students per computer and I actually found that surprising as I did the percentage of teachers using technology. Based on actually talking to schools in Northwest Indiana, most schools still have technology labs set up but they are not even close to 1:1 ratio or even 1:2 ratio in the classroom due to funding. According to the National Center of Education Statistics, 47-61% of teachers are using technology, but yet again that's just the hardware so I guess if you are turning on a projector, than technology is being used (p.5). It would be interesting to do this report again and put in more specific questions on the survey such as how are the students using technology for 21<sup>st</sup> Century Skills, rather than looking at how teachers are using technology for email, communicating with parents, and posting grades.

The Horizon Report, K-12 was a very interesting read and in the report it is stated that the upcoming technologies to be used by educators and students will be cloud computing such as Google Apps within the next year, gaming in a year or two, and learning analytics will be three to four years (2011). I do believe that gaming and upcoming technologies are going to keep advancing and it's important to stay current with these changes in technologies. One way to stay a head of the curve of new technologies is have students use it and learn from the students. It's impossible as a facilitator to learn everything but it would be much easier to learn from your students when you give them control to use technologies. So this just does reinforce the following quote from the Horizon report when I stated: I found it interesting that the Horizon report states, "technology can and should support individual choices about access to materials and expertise, amount and type of educational content, and methods of teaching," but our technology is not there yet to support student learning (p. 7), or have students create their own personal learning communities (PLEs). Open source learning and using mobile devices will be also sources of technology integrated with student learning. The use of leaning analytics and data

mining of students will become huge for districts in order to use it to differentiate instruction and formative evaluations based on data collected from the students (Horizon Report, 2011, p. 28). Data mining is going to keep growing in K-12 education with assessments, student and teacher data as was illustrated in week 5 of our discussions and readings. The few administrators that I have talked to in the K-12 realm would like to utilize data mining but know the costs are high to employ. Some colleges and universities are using this technology now.

## References

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