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In the information era, how do we ensure that we engage students in critical learning activities?

I once had a math teacher tell me that knowing how to do longhand division would be an important life skill because I wouldn’t always have a calculator with me. Guess what? I always have a calculator with me, but the device I use isn’t just a calculator... it’s also a phone, GPS, and a computer that has access to high speed Internet. Many people today have a vast amount of information available at their fingertips. Factual information can be looked up in a heartbeat and calculations made in a flash. Is it really important that I know *how* to divide longhand, or is it more important that I know *when* to use division? How do we ensure students are using this technology to its full advantage?

I’ve recently become aware of a new search engine, or more accurately a computational knowledge engine, called Wolfram|Alpha. This search tool may quickly become as well-known as the search engine giant, Google. I believe that it may even prove to be a tool as important as the modern day calculator. The software that drives Wolfram|Alpha makes it possible for the user to query a subject and immediately receive accurate information while additionally providing “interesting” information. For example, if “Mount Rainier” is typed into the search box, your search will return the elevation, a map, location, nearest mountains and cities, the first year it was summited, the local time and other “interesting” facts related to Mount Rainer. Wolfram|Alpha also has significant implications for teaching and learning mathematics and science. Mathematical formulas, expressions or equations can quickly and easily be searched and the response will be detailed and provide every mathematical representation known. Could students simply type their homework questions into the search site and expect to get the correct answers? Is getting the right answer most important to learning? What if, in the future, sites such as Wolfram|Alpha become as widespread as the calculator?

Last summer, I had the opportunity to make a presentation about the changing landscape of online resources at an administrator’s conference in Eastern Washington. During the presentation, I asked the following question: “What was the main topic of FDR’s first fireside chat?” The group was given two minutes to answer the question and they had the ability to use any available resource. Out of the 30 people attending the session I had two that were able to answer the question. Both used web enabled phones to “Google” the question. When I ask this same question to high school students nearly every student pulls out their phone and has

the answer almost immediately. Interestingly, many students don't have web-enabled phones; however, they are still able to find the answer in less than two minutes. How do they do it? They use text-messaging services, such as ChaCha, to send a question in the form of a text message in which an answer is provided to them within two minutes. If I had explained ChaCha to the administrators before I asked the question about FDR, I wonder how many of them would have used this tool? I find myself wondering, if we are asking our students to answer questions and perform tasks that are increasingly becoming automated, are those questions and tasks truly critical learning activities?

It seems to me that with regard to access to information there is a major disconnect between real life and life as a student. In real life, when we as professionals are asked to solve a problem, we usually have open access to resources that help us to research, reflect on the information we find, look at what others have done and, in some cases, even borrow and reshape ideas and approaches. In schools, we often don't allow or even encourage kids to use the tools and resources we have readily available to us in real life.

While I still believe there is a place for factual knowledge recall within our children's educational experience, I also think we need to give careful consideration to what it means to be educated and prepared for the 21st Century. The students sitting in our classrooms have a mind-boggling abundance of information at their fingertips. If we don't provide them with the skills, knowledge, and desire to use this information in powerful ways, then I believe we are doing a disservice to them. Before we assign a project, what types of questions and activities should we be asking of students and how should they incorporate this knowledge into the task? How do these sometimes frowned-upon tools have powerful potential for learning? I think it is imperative that we begin to examine how we can use our access to information to help build critical, yet meaningful, learning activities for our students that can build life-long skills.

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