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Rogerian Argument: Parents of High School Students

The Most Important Class that Doesn’t Exist: Computer Science in Utah High Schools

I remember the first time I looked at a piece of computer code. I felt overwhelmed. What did it all mean? It was a collage of semi-colons and angle brackets with words that resembled English wedged in between. I will be the first to say that computer science is one of the most difficult things I have ever tried to learn. Then, to add computer science classes to the already difficult high school curriculum may be hard for high school students. I graduated high school with a modest GPA of 3.2 and that was all that my sweat and blood could muster. Will adding computer science requirements adversely affect high school students? I can see how one might think so.

That is question that needs to be answered then: What will the effect be if high school students are required to take computer science classes? Some might argue that students will be overloaded and grades will drop. Computer science requires homework. I can remember times that I was up until 2:00 AM slaving over a single line of code. Clearly we do not want our high school students up until 2:00 AM. According to the National Sleep Foundation, teens need on average 9 ½ hours of sleep each night and lack of sleep may “limit [their] ability to learn.”(“Teen and Sleep”) This most certainly is a valid concern for students, teachers and parents alike. Many would agree that lack of sleep is too high a cost.

Now sleep deprivation may be somewhat of a trivial matter, but some might even say that it’s not something that would be necessary at all. There can be other ways to learn computer science without the added homework (although the time and effort required to learn would be the same). Clubs, after school programs and online tutors are other ways that students can learn to write code. These types of activities, if guided by the right person or group of people, can be very beneficial to the beginning programmer. Also, many places offer to teach coding for free online. These thing would limit overhead cost to schools and students.

That leads to the next hurdle. What about the material cost for students and their parents? Computers are expensive and licenses for software are often more. Parents might worry about being able to provide the equipment necessary for their students to succeed in computer science. I often work with a software development kit (SDK) called Unity. The license for the full version of Unity is $1500.00(“Pre-Order”). This is an expense that few could afford in this day in age. Not only would the students need to purchase expensive equipment, schools may need to upgrade or purchase new equipment in order to host computer sciences classes and provide an adequate learning environment. The expenses for these kinds of projects have to be paid for by someone.

I recognize that our students’ success should be the first priority of our school districts, and while added homework and additional expenses are valid concerns, we need to step back and take a look at the whole picture. Eventually students will graduate and go to college. Isn’t this really the goal of our high schools, to prepare the students so that they have a successful college experience? Additionally, we don’t want our students to stop at college. They should go on and have a career. The average salary of software developers in 2012 was $93,350. (“Summary”) This is one of the highest paying careers for the amount of education required. In Utah alone there are over 7000 employers looking to hire computer science majors on a regular basis yet Utah colleges only produces around 500 computer science graduates every year (“The Problem”). We simply are not providing high school students the experience necessary to succeed in computer science at a college level.

That success does come at cost. Students would have more homework in high school but we are failing to see how well computer science classes interact with the other classes already required. Tailoring computer science classes to compliment the core math courses would be extremely beneficial to the amount of math students retain. Computer science classes would provide students with a practical application of the math they already have to learn and give them added practice and repetition of those concepts. Overall the value of providing students with practical situations to apply math is extremely understated.

The value in experience would well outweigh the cost associated with it if any. There are many companies that are hiring people are interested in computer science (not computer science majors) that have just barely cracked the surface of learning to program. Take for example the company Microsoft. They offer internships and jobs to really just about anyone that has a just a little bit of experience. They do this because they realize the importance of getting experience early on and are willing to pay people to get them that experience. In order to get experience you will need equipment. I recognize that computers may be expensive yes, but most households already have computers that would be sufficient for the concepts that would be learned at a high school level. Existing computer labs in schools could be converted with little effort to create a suitable situation for computer science learning. Software can also often be obtained for little or no cost to students and educational facilities. (“Pre-Order”)

Despite the numerous benefits, I can recognize that computer science may not be for everybody, but our students need the opportunity to learn either way. There will come a day where knowing a computer language is as necessary as knowing English. To start the path down that road, all Utah high schools should offer computer science courses and allow students to take them to fulfill a core science, technology or math credit. This will create a model of success that could eventually lead to computer science courses being required to graduate. But one step at a time.

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