Philosophy of Education Statement

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Introduction

According to Kawamoto (2016), 10 out of the 25 best jobs in 2016 will by jobs involving Information Technology (IT). Does that mean that we should convince all of our children to drop what they're doing and start studying for IT? No it doesn't. Every child is different, and every child has different interests and abilities, and we should encourage our children to do what fits them best. We should encourage what helps bring out their abilities and creativity that most.

However, Angeles (2014) does list a few tech skills that she says are required in almost any job. With the rapid pace of changing technologies and business, basic computer literacy and tech knowledge are seen as an almost fundamental requirement. Does this mean that every child needs to be an expert in computer science? No it doesn't. And although two of the skills listed by Angeles include the ability to use Microsoft Excel and the ability to troubleshoot, she doesn't say that people need to be experts when it comes to these skills. She is merely saying that familiarity with these skills can boost a person's chances of getting employment when they enter the job market. Don't we want to give our children every tool possible to help them succeed in life? Yes, I believe we do.

Technology Philosophy

I have spent 15 years working in a variety of IT jobs, performing a variety of IT roles. I've done basic hardware and software maintenance, server and network administration, customer requirements analysis and project management, and even a little web development and programming on the side. I won't say I've done everything, because the field of IT is so vast, and it's always changing. But the important thing about my varied experience is that I've been able to see the various types of people that work in IT. It's not just the stereotypical computer nerd

with glasses that works in these jobs, but people from a variety of backgrounds and cultures, both male and female. I truly believe that anyone can work in the IT field.

But how does IT relate to computer science? Isn't IT mostly hardware and software, while computer science is mostly programming? Don't most children hate programming (I know most adults do)? I think it mostly comes down to customer requirements, and what is the end goal that you want to support. You can share data between computers using a CD that costs pennies, or you can build a multi-million dollar network to support online collaboration. Likewise, you can use programming concepts like variables and conditionals to build a database application consisting of thousands of lines of code, or you could use those concepts to build a simple application that simulates rolling dice. What are the requirements that need to be met, and what is the end goal?

And when you step back from programming itself, building software application isn't all about programming. Kawamoto (2016) listed Software Engineer (what we would consider a traditional programmer) as only one of the jobs on her list. UX Designer (someone who would help design a user interface for a program) and QA Manager (someone who would ensure the program functions correctly) were both listed on her list, and they are both critical roles in software development. Neither role requires a strong background in programming, although a little background would enable better collaboration with the actual software engineers writing the application.

This leads to my ultimate feeling on technology: anyone can work in the field because there are a wide variety of jobs required in the field. There are jobs that require different personalities and talents, soft skills and hard skills and everything in between. But how does this lead into education? Because everyone can benefit from learning about technology!

Educational Philosophy

I believe that everyone can learn, and I believe that everyone should continue to learn throughout their lives. It can be difficult sometimes, but I believe my background in IT has made me more perceptive to this need than other people. Technology is always changing, and the pace of the change doesn't seem to be slowing down. People who stop learning in the field of IT are putting themselves at risk for losing their jobs in the future. But more importantly, some studies have showing that keeping your brain active as you get older, through learning or other mental exercises, can help reduce the risk of Alzheimer's disease and dementia (National Institute on Aging, 2012).

To ease the difficulty of continuing education, one of the techniques I use is to focus on topics that interest me, particularly 3D graphics and computer game development. This increases my motivation and energy, and allows me to keep working at a topic when I otherwise may have given up (either because it was too difficult or requires too much time). Another technique I use for the less interesting (but still required for my job) topics is to identify the medium that is easiest for me to learn. Certain computer textbooks can be very dry and boring, and I find it difficult to learn effectively from them. However there has recently been a boom in video instruction available from the Internet, and this has enabled me to not only continue my professional education, but to also learn some new topics that I would've never learned otherwise.

Although I fully intend to share the two techniques with my students, the greater value those techniques have provided is that they've shaped my philosophy on teaching. Passively reading a book, especially one with dense information that I may not be familiar with, is incredibly painful. However, following along with an energetic instructor as he breaks down the

dense information into bite-sized chunks, and demonstrates how to use those chunks, is a whole different story. I want to be that energetic instructor, and I want to teach my students how to use the information to help them grow. I don't want them to have to rely on the textbook, although it will always be there for the students who want to use it.

Art and Science

Originally children had the option of taking wood shop or metal shop as an elective. Now they have the option of taking Java programming or computer graphics classes. Does this mean that children are losing out on their opportunities to create, or express their feelings through art? No, I don't believe so. I believe that computer science can be as much art as it is science, and not just because you have to opportunity to create games or graphics. I believe that it can be an art because there is usually many different ways to attack a problem, and many different tools that can be used.

You can carve a figure from wood using a single block of wood, or you can glue multiple pieces of smaller wood together, and then cut the large block down to size. You'll get a figure in the end (hopefully), but the outcomes will probably look vastly different. Likewise, you can write a program using a single class (or file), or you can use multiple classes and object oriented programming to achieve the same goal. Again, the outcomes will look vastly different, but it can ultimately be up to the preference of the student.

I see teaching computer science as similar to teaching a class like wood shop. You can teach the basics of programming to a student, which is similar to teaching a student to use tools, but the ultimate goal will be what you can create once you have the knowledge. A computer science course should be built around projects that the students can build once they have the requisite knowledge. This can accommodate the variety of students that will no doubt attend the

class. Some will take to the subject naturally, and will use all of the tools to create something magnificent. Others will struggle and may not be able to use all of the tools equally well, but in the end I hope they will still be able to create something that they can be proud of, and hopefully learn some valuable skills along the way.

Conclusion

All children are different. All children learn differently. But I believe all children can learn something valuable from computer science. And because I feel strongly that computer science can taught similar to traditional arts and crafts classes, I think I can make most of the concepts accessible to almost any student. Whether or not they decide to go into the field of computer science and program for a living, they can learn valuable skills that can be applied to any field they wish to pursue. I want to set up our future generation for success, and I am confident that my philosophies on technology, education, and life will help me do that. I cannot wait to start teaching!

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