

## **4. Professional Certification: Pros and Cons**

**by**

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Welcome to the motivational articles section of my web site. In this article I will discuss the pros and cons of obtaining professional certifications for professors.

As mentioned in my first motivational article dated July 2009, I joined academia after a 24 year career in the industry and government. Therefore, while I strongly believe that conducting excellent research is of utmost importance, being a professor also means striving for excellence in education and being up-to-date with all of the developments in the computer industry. Computer Science is advancing rapidly. For example, much of the content for a solid grounding in Mathematics will include algebra, calculus, linear algebra and matrices, and analysis back in 1970s as well as now. Many of the principles were developed in the 16<sup>th</sup>, 17<sup>th</sup> and 18<sup>th</sup> centuries and have not changed. However, an education in computer science back in the 1970s and 1980s would include Fortran, Pascal, Data Structures, and Assembly Language Programming. Today, it will be Java, Enterprise Java Beans, Distributed Systems, and Information Security. Therefore, it is critical that a professor has up-to-date knowledge about this rapidly evolving field.

Many of our BS and MS students will have a career in the industry as practitioners of computer science and information security. Therefore, they have to get certifications in relevant topics for many of these jobs. For example, the 8570 directive of the Department of Defense has mandated every person (either DoD personnel or contractors) must be a CISSP (Certified Information Systems Security Professional). It is not easy to get this certification. There is a lot of technical material both in terms of breadth and depth and the students will have to answer 250 multiple choice questions in 6 hours. Passing this exam means an interesting job with the DoD for my students. For other jobs, certifications such as say Oracle DBA would be helpful. Therefore, to remain competitive, computer science departments will have to introduce courses that would result in certifications. This means that the instructor has to be knowledgeable about these certifications. I know of many professors who can pick up a book, read and get the knowledge they need to teach some of the tough classes. However, some others (and me being one) prefer some formal training. I can really focus when I know that there is an exam at the end.

My colleagues and students have asked me why I am taking certifications such as CISSP (ISC2) and Terrorism Studies (St. Andrews University). As I have explained before, I do very well in a formal setting. Next, I am very keen on my students who are not pursuing research careers get these certifications so that they can be competitive in the marketplace. Furthermore, these certifications also help me in my research. For example, by taking the certification on Terrorism studies at St. Andrews, I have a much better idea on the motivation, ideology and the modus operandi of the terrorist. Then I can develop more effective data mining tools to deal with the

terrorists and hackers. Taking the CISSP certification, makes me understand what the students have to go through so that I can better prepare them for the exam. Back in 1998, when I was a department manager at MITRE, I felt that there was a need to understand the code that some members of my technical staff were developing. Therefore, I got a certification in Java programming at that time so that I can participate in the development and discussions with my staff. Another area I feel is important for me is to get a much better understanding of social sciences. More recently, I have been putting together interdisciplinary programs that integrate computer sciences with social sciences. Therefore, an understanding of the social theories would be most helpful for my research. I have noted that as researchers we would prefer to have depth in our work and not breadth. However, as educators we also need the breadth.

Now, what are the cons of getting these certifications? It's time and money. Taking classes, reading text books and doing assignments are time consuming. While it will enhance the teaching, it may have a negative impact on the research. Therefore, I will not advise this plan of action for assistant professors many of whom work night and day to get their tenure or for associate professors who are focused on getting to that next level. Furthermore, for those who do teaching only because they have to, such certifications may not be worthwhile if their heart is not in it. However, if they can get the knowledge and teach students effectively without going through a formal process, then it's fine. It's up to the individual.

I must say that I am really enjoying doing some serious studying for about 4 hours a week. It does give variety to the work I do. I have had many professional roles in my career including those of a researcher, educator, developer, author, project leader, department manager, program manager, principal investigator, director, consultant, and entrepreneur. Adding the role of a student to the mix makes my job even more interesting. I also find that studying gives me better focus and motivation. The positive attitude also infiltrates into my personal life and gives me motivation to eat healthy foods, meditate and workout daily. Most importantly, it helps me in my personal roles as a wife and a mother.

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