Classical Education–The Best Preparation for STEM

by Christopher Perrrin, PhD | Apr 7, 2015 | Articles | 0 comments

For some reason, the last month has featured a flurry of articles about the importance of STEM education and the relevance of the liberal arts. No doubt the country has become increasingly aware of the "global marketplace" and we continue to wince over our math scores in comparison to other developed countries. From time to time countries such as Finland (population 5.5 million) and Singapore (also 5.5 million) are cited as examples we should emulate.

During the last few years, the liberal arts have come under increasing scrutiny as many are questioning the value of studying English, history, philosophy, and the so-called "humanities" if we expect to produce graduates who will be able to compete in the global marketplace that seems to require more scientists, mathematicians, engineers, and computer programmers.

Well, this is not a new conversation or debate. In the United States, the debate started around 1890 with the establishment of the Committee of Ten, the national education committee (!) that made a study of education in the US and made suggestions for improvement. That was the inauguration of the progressive era of education, in which the liberal arts came under scrutiny, suspicion, and then attack—for many decades. As one small example, progressive theorists critiqued the study of Latin as a subject good for . . . the study of Latin. In other words they argued that the study of Latin had no "mental training" value, no transferable skill to other kinds of learning in other subjects. Latin was good for learning Latin, and not much else.

I won't attempt to rehearse the last 100 years of educational history, but I highlight the beginning of progressive education and one small example to point out that the current STEM conversation is nothing really new. It is rather a continuation of America's argument about what an education is and should be. Is it the cultivation of a human being or is it job training? In what ways could it be both?

As America possesses a large strain of pragmatism, there is naturally always going to be a loud voice arguing for a practical education—education that is really more vocational training than anything else. It is the American pragmatist who asks of the English major, "What are you going to do with that?" and of Shakespeare "What is Shakespeare going to do for me?" It rarely occurs to the pragmatist to ask, "What will Shakespeare do *to* me?"

But here is the paradox: One of man's chief practical needs is not to be a pragmatist (that's Chesterton by the way). Studying the liberal arts actually does impart a freedom of soul, mind, conscience, and spirit that makes men and women the best versions of themselves and thus, yes, better workers of all kinds—better scientist, engineers, and computer programmers. In fact, a liberally educated engineer (a rarity) appears today almost as a god. The engineers, who can ask the large questions, integrate knowledge, work across disciplines, and write and speak beautifully and persuasively, they

are the engineers who start companies or rise up as division managers and CEOs.

Might you find counter examples? Sure. We know well the stereotype of the English major waiting tables or working at Starbucks. What we don't know well is the fact that English majors are also more likely than many other majors to be CEOs of Fortune 500 companies.

Others more informed than I make these points well. This concept is the larger thesis of Tony Wagner's book *The Global Achievement Gap*. His research shows that the skills that government, military, and business leaders want in their employees are the fruits of . . . a liberal arts education. His list of the seven survival skills needed today indeed is the fruit of a liberal arts education:

1. Critical Thinking and Problem Solving
2. Collaboration Across Networks and Leading by Influence
3. Agility and Adaptability
4. Initiative and Entrepreneurialism
5. Effective Oral and Written Communication
6. Accessing and Analyzing Information
7. Curiosity and Imagination

I should also cite the common (almost clichéd) examples of technological leaders arguing that liberal arts training is a part of what makes technology sing. Steve Jobs described Apple as the intersection of the liberal arts and technology. Mark Zuckerberg studied Greek and Greek philosophy. Damon Harowitz, the in-house philosopher at Google, has written an article entitled "Why You Should Quit Your Technology Job and Get a Humanities PhD." What Horowitz says is insightful: technological work tends to keep one's head down, focused on the particular. The humanities lift your head up to consider the larger world, the ideals that make us human, the general.

Yes, with college costs continuing to rise, there are competing calls for what education should be and for what students should major

in. Senator Marco Rubio encourages students to think twice before majoring in Greek philosophy (like Mark Zuckerberg), but a professional chemist writes that she needs chemists with a liberal arts education.

Let me offer what I think can help both sides of this debate: return to K–12 liberal arts education. College ought not to be the time at which one must chose between chemistry and classic literature. It is possible, and used to be common, to get a robust liberal arts education before college (and during college). Many classically educated college students I know are opting for double majors (yes, even English and chemistry).

We should also note that the liberal arts traditionally includes the mathematical arts—arithmetic, geometry, astronomy, and music (the study of harmony and ratio), making it a false dichotomy to pit the "liberal arts" against science and math. This is a large weakness in the debate: we no longer know what the liberal arts are, nor why they are called "arts," nor why they are called "liberal." Without understanding the very words we are using in debate, we are doomed before we begin. A good study of the trivium arts (grammar, logic, and rhetoric) would prevent this.

I will conclude with two points. First, let me restate the point above. The liberal arts are not opposed to STEM education, but rather incorporate a good deal of STEM education—in particular mathematical and scientific education. My daughter graduated in a class of four from a local classical school. One graduate is in medical school, another is a PhD student in physical therapy, another is designing apps for the iPad with a tech company in Philadelphia, my daughter is studying for her master's degree in counseling at Villanova.

Second, many predict that more than 50 percent of the jobs that will exist in the next ten years don't exist now. In other words, we need to educate students who are nimble, adaptable, agile, and innovative —the fruit of a classical education.