

Education of Our Leaders in the Next Century

Mark Johnson

The past half-century has been a particularly good period for the Massachusetts Institute of Technology. While MIT has long been known as perhaps the world's premier technical institute, MIT has considerably expanded in reputation, becoming one of the leading international institutions of learning at both the undergraduate and graduate levels. MIT's reputation is perhaps even more exalted outside the United States as compared to that within this country, but everywhere, as the twenty-first century begins, it is viewed not only as a fine technical school but also as one of the most elite and prominent educational institutions on the planet.

Well, what has MIT been doing right? I propose that MIT has done nothing fundamentally different in 1999 than was being done in 1949. Instead, we might say that the Mountain appears to have come to Mohammed rather than Mohammed going to the Mountain. Technology has become the mantra of the last part of this century, and the educational process has necessarily put more emphasis on the technical subjects – math, physics, chemistry, biology, and especially engineering. As MIT has always been very good at teaching technical subjects, it is not at all surprising that MIT has vaulted to near the top of the rankings, as top students have increasingly chosen a more technical education.

MIT has not been alone in this success. If we consider the top 10 colleges ranked in the *U.S. News and World Report* for 1998, we see other universities that specialize in engineering and technology including Stanford, Cornell, California Tech, and

Northwestern. Northwestern is notable since the University of Chicago, long viewed as the “elite” university of Chicago, was ranked lower than Northwestern in 1998. The most highly ranked undergraduate schools in the United States are no longer the exclusive territory of the Ivy League schools. They increasingly have had to share these rankings with the more technical schools. While these rankings likely have little meaning regarding the true quality of education, they tell us much about people's perceptions of the changing educational environment.

As we move into a new century, I believe that these schools, that have their strengths in technology, have an opportunity to examine this changing environment and decide what their mission should be into the next century. While it will be tempting for these schools to continue with their strength given that technology seems to be taking an ever more dominant role in society, there will be new possibilities that will arise for those schools that have, somewhat fortuitously, risen to near the top of the heap.

The top schools in the United States, particularly the top 20 or so, have as part of their mission, to train our future leaders. Technology is without question an area that our leaders will increasingly need to understand since they will, by necessity, be making an increasing number of decisions concerning technology and its application to society. However, a university that has developed excellence in technology is not necessarily one that will excel in training future leaders. Should a university decide that it would like to

include training of the nation's leaders as part of its mission, it must include a well-rounded education as part of its curriculum, of the type traditionally associated with the Ivy League schools.

Now I suspect that it would be argued by members of the administration of these “upstart” universities that they need not take the route followed by Ivy League schools: Look how many national and corporate leaders have already been developed by these technical schools. And yes, they have had considerable success. MIT alone can claim recently a Secretary of State, Director of the CIA, Secretary of the Air Force, many CEOs, not to mention founders of numerous startup companies. I, however, would again claim that the universities have been fortunate due to the rising importance of technology, and that their weaknesses in providing a well-rounded education has so far been more than offset by their technical expertise, especially given the technical weakness of the traditional schools where future leaders once trained.

But new competition is developing. Ivy league schools are beginning to strengthen their technical programs and hope to reclaim what they have lost. Perhaps of even more significance is the development of a few universities with a strong technical reputation, but with an equally impressive reputation for providing a well-rounded educational experience. Foremost among these is Stanford University, which has demonstrated not only leadership in technical areas, but is also ranked as a leader in a wide variety of academic pursuits. Stanford is not unique in this regard, as other

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universities, such as the University of California at Berkeley, have a similar reputation.

These universities have built well-balanced programs that leave them well-poised to be the leading universities of the next generation. Their success clearly involves a diverse faculty. I would propose that there are other important characteristics of their success. These include a well-balanced student body and a learning environment that foster well-balanced growth.

Balance is the key, and balance comes from a recognition that undergraduate education should not be focused upon optimizing how much information the students are taught. Instead, it is about teaching the student how to learn and how to become a life-long student. It is also about opening vistas and viewpoints to allow flexibility in thought. While many technical schools seem focused on long hours of work and homework sets, a balanced education requires time for other areas of learning; organized extracurricular activities, social interactions, athletics, and significant time for talk between the students, perhaps among the most important of educational experiences.

Courses that emphasize problem sets have been a mainstay of the technical universities. Problem sets teach problem-solving techniques, and this is a crucial skill taught by these universities that is valued not only in the pursuit of science and technology, but more recently by investment bankers, financial analysts, and others in areas where technical skills have found new applications. However, my impression is that recently professors at technical universities are using problem sets not only to teach how to solve problems, but are increasingly using them to introduce the students to a wide variety of technical topics. This is not to say that homework sets, tests, and hours upon hours of study are not central aspects of the educational process, but when studying begins to

squeeze-out all other activities (as it does at several of the top technical universities) the educational process is not enhanced.

Students need time to be introduced to other areas, and they need time for personal growth. They need time to read the classics, to expand their communication skills, to investigate the arts, to understand history and politics, and they need time to mature and to interact with their peers. They very much need time for extracurricular activities. For most students, the college years are the first time that they are out on their own and making most of their decisions by themselves. Their growth as an individual is just as important as their growth in knowledge.

It is notable that Stanford's unique educational environment includes athletic teams that are competitive in almost all sporting areas with the very top universities in the country. Thus, while a number of East Coast universities maintain that athletics must be kept at a Division III level to prevent a diminution of the educational mission, Stanford has managed to consistently produce top athletes in a wide variety of sports (including the major sports) while also producing what is unquestionably academic excellence.

Athletics is a central part of a well-rounded education. There are the old saws about the importance of learning teamwork, learning about your own potential, experiencing new activities, and health benefits of sports. However, these objectives can largely be met with a physical education program. Intercollegiate competition, especially at the highest levels, inspires a dedication and enthusiasm not seen in intramural sports or local interscholastic competition. This is not to degrade those pursuits, but leaders are exceptional individuals that excel when given exceptional challenges. Furthermore, at the young ages that these individuals prepare to attend college, these athletic dreams are frequently foremost in

their thinking. Those universities wishing to recruit these future leaders must necessarily provide the challenges these student athletes seek.

Academic excellence, athletic and other extracurricular opportunities, a diverse faculty, and a balanced learning environment: These are the characteristics that talented students and potential future leaders look for when choosing a university. A university that excels in all of these characteristics is going to have a well-balanced student body. It is the interaction among these students that is perhaps the most important aspect of the university educational experience. Their discussions with one another, both relating to academics and other aspects of their formative years, are the foundation of the learning experience. For these discussions to achieve their maximum possible impact requires a well-balanced student body, of the type that will be drawn to a well-balanced university. The "nerd" label, still associated with the students of some technical universities, will continue to hamper their efforts to diversify the educational experience of their students.

While new opportunities for an expanded educational mission will likely arise for the top technical universities in the country, these universities will necessarily need to decide whether such an expanded educational mission might interfere with what has up to now been their fundamental mission, namely that of providing the finest technical education possible. Most of the universities will likely decide that continuing to provide the finest technical education need remain their fundamental focus. However, a few of these universities might find that their unique capabilities will allow them to somewhat alter their mission and aid in producing a new generation of leaders better able to address the many technical challenges they will face.❖

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