

Editorial

Since a vast majority of research papers published in this journal, as in other archival journals, depends on contributions from universities, I would like to devote several editorial pages in the coming year to engineering education and where it is going over the next several decades. I define true visionary as one with a foresight that is as good as his/her hindsight. As we all know hindsight is 20:20 for at least those of us who do look at what happened in the past. The same cannot be said of our foresight, unfortunately. Vision has a naturally tendency toward becoming blurry, and no crystal ball is really crystal-clear.

Buzz words like globalization, knowledge-intensive society, sustainable development, intellectual property rights etc. are thrown around freely in all discussions these days. Many of these *mantras* have been around for centuries but as no one came up with the right catch words, they were not popularly recognized. In any case, like it or not, these factors will affect universities around the world. As the economic map of the globe keeps evolving with the populous and rapidly developing countries like China, India, Brazil etc. making rapid proportional gains on all fronts, academic institutions everywhere will feel this change and will need to reposition themselves. They will have to be nimble and flexible and led by true visionaries. Darwinian survival of the fittest will possibly cause some even big institutions to shrink or vanish while others merge or otherwise take on new identities. Multi-university campuses (i.e. several universities- both private and public on same campus) will likely flourish due to cost-competitiveness by sharing of resources and economy of scale. Students in now-developing world may not find it necessary to travel too far overseas as they will be able to find equivalent opportunities locally or within their own country and region. The “gradient” needed to drive the flow of students and talent across geographical boundaries is flattening out while the developments in internet and telecommunication technologies have already made it a level playing field for both the developed and developing world. In some cases, I foresee the gradient may even reverse (in favor of?)

Despite all the mind-boggling changes occurring worldwide, I see the goal of university education to remain nearly unchanged viz. the development, dissemination and preservation of knowledge. At least I hope it will remain so. What is dynamic is knowledge itself. It will probably continue to rise exponentially for decades. It will in fact be impossible to cover even the essentials of all the newly generated knowledge within any curriculum. Although the goal of tertiary education will likely stay the same, the means to deliver them will certainly have to change. Within the timeframe of current degree programs there will not be enough time to do all the unlearning, learning and self-learning necessary. I believe that emphasis will then shift to self-learning and life-long learning. The focus must shift from teaching to learning; the former will be just one tool in the toolbox of education, and possibly a minor one at that. Global universities will flourish. Students will likely be able to choose from among the best in the world in any sub-field and not just the major field. Clearly, there will be a sizable impact of these developments on the research model currently followed by most universities.

The subject of tools that will likely become more popular in tertiary education and geographic, economic, cultural as well as social changes that may occur in the coming decades will be the theme of a forthcoming editorial. In the meantime what is most important for students is to develop the ability to self-learn and develop a clear understanding of the need for life-long learning as the half-life of university education will continue to shrink rapidly.

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