

Editorial

In recent weeks, discussions re-emerged about the accountability of professors and the bottom line of educational institutions (chronicle.com/article/Texas-A-M-System-Will-Rate/124280/). In the context of the discussions the expression *bottom line* was used literally as applied to the financial sector and industry; the concern is exclusively with costs and profits. This clarification is needed here lest one thinks it was used as a figure of speech. After all, one would think that educational institutions are in the business of teaching, learning and the discovery of new knowledge, and that the accountability of educators should be closely related to these objectives.

Numerous opinions were voiced and appeared online. They capture varied points of views. In general, discussions are healthy; reflecting on one's practice will hopefully lead to improvement. However, the way the views were presented could leave the public, including students, with the impression that *all* professors are currently not accountable and that they resist and resent attempts to hold them accountable. Such a conclusion would be erroneous.

It would inspire confidence to communicate to the public how professors are currently held accountable under the prevailing academic model. Those who are seeking promotion through the academic ranks face very strict criteria which are put in place in all reputable universities. In addition to the usual annual reviews, their work is typically assessed by special investigating committees. The approach has no parallel in its rigor in the financial sector, industry or even in the non-academic sectors of a university. The assessment criteria may include the evaluation of teaching performance, research activities, community services, professional recognition, etc. The criteria may also set an expectation of securing a specified amount of research funds to the institutions over a given period of time. Further, most engineering educators are members of one or more professional organizations that have rules of conduct and professional accountability standards for all of their members. Some individuals misunderstand the theoretical concept of academic freedom; they think it implies that professors can do or say whatever they like about the affairs of the university. It is important for the public to realize that faculty members are not policy makers. Their academic careers could even suffer if they give voice to views opposing administrators about the policies of the institution.

Graduate students and post-doctorate fellows, who are the backbone of research that brings funding to the university, are typically paid at a rate far below engineers working in industry because an academic model is used by the university. Perhaps this is one of the reasons for industry to be interested in funding projects in universities. Teaching a small class of graduate students could thus be of financial importance. Applying a business model here would require a substantial increase in the compensations of professors, post-doctorate fellows and graduate students. There is another unique situation in the academic model: it is the professors who are directly responsible to secure research funds rather than the university administrators. The university and the funding agency strictly control the spending of the research funds.

Even if unfunded scholarly activities, in and by themselves, don't add money to coffers of the university they nevertheless serve to inspire confidence and enhance the reputation and credibility of the university. This would help both student enrollment and securing funds for research. Numerous industrial organizations pay individuals to whom the public may look up to endorse their products and hence enhancing their marketability. Furthermore, it is useful to reflect that no reasonable individual would now dismiss the work done to introduce the theory of relativity, although it was not based on funded research.

Finally, the use of financial terminology when talking about education in a reputable university could erode the confidence of the public. Using such an approach might have been impressive years ago, but now it has the potential of leading one to link the activities of a university to ideas such as: education bubble, devaluation of education, inflation of marks and degrees, insolvency due short-term bottom line planning, and numerous other phenomena that parallel the illnesses that plagued the non-academic sectors leading to the recent international financial problems. The remark attributed to Warren Bennis that *leaders keep their eyes on the horizon, not just the bottom line* is applicable in business and perhaps more so in academia.

A positive point that may emerge from thoughtful examination of the concept of *bottom line* in a university context is the demonstration of the importance of teaching both graduate students and undergraduates. It follows that research in engineering education should gain more prominence than ever before. It is a positive trend if everyone sees the value of knowledge, discovery, teaching, learning, and scholarly activities.

This issue of the IJEE has papers that will undoubtedly attract the attention of many engineering educators and will leave an impact on teaching and learning. They include the second part of the special

issue on *Applications of Engineering Education Research*. The special issue is guest-edited by Professors Susan Lord and Cynthia Finelli to whom I would like to express once again my gratitude and thanks. The issue also includes papers addressing various other topics such as: credentials of immigrant professionals, student attitudes, motivational factors, e-learning, development and evaluation of various laboratories, simulations, and courses, and the evaluation of engineering schools.

I would like to thank all the authors for making these important contributions.

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