Engineering Education Journals: Global Dissemination of Innovations in Teaching

Charles B. Fleddermann
Editor-in-Chief, IEEE Transactions on Education

As the new editor of *IEEE Transactions on Education*, I am very pleased that *IEEE-RITA* has become part of the journal offerings of the IEEE Education Society. I am looking forward to a productive partnership with the editors of RITA as we jointly seek to help improve engineering education worldwide.

Engineering education in the US is undergoing rapid changes, partly in response to changes in accreditation criteria, but also because of several reports produced by the US government and by professional societies outlining the needs for change in the way we train engineers and computer scientists to meet the challenges of this century. Reports such as Educating the Engineer of 2020 and Rising Above the Storm describe these challenges in great detail. I don't know if similar concerns have arisen in Latin America and the Iberian Peninsula, but it seems that these reports express concerns that apply to all of the Americas and the world as well.

In order to address these concerns, we should consider the nature of the engineering students we teach. In an editorial in Transactions on Education, I wrote that "The students who are pursuing engineering education today are different from those of the past. On average, today's students read less, have shorter attention spans, and expect to be entertained more in the classroom than did students of the past. The hands-on tinkering skills they bring to our classrooms are not learned from working on their own cars or taking apart the family radio as in my generation, but rather come from manipulating the high-tech environment they find themselves in: they possess amazing skills in making cell phones, television remote controls, and video games perform to perfection. Today's students also bring a diverse range of learning styles to our classrooms. In the past we could assume that blackboard presentations were best for teaching our students. This assumption no longer holds true…"

We have to inculcate in our students the same level of technical knowledge and skills we have come to expect, even though many of these students bear little resemblance to the engineering students we ourselves went to school with." Although I was describing our typical engineering student in the US, I know that these characteristics are common to all students around the world. An important question for all engineering educators is: how do we best design our curricula to teach this new type of student, and how do we disseminate the best practices in engineering education to our colleagues throughout the world?

The answers to these questions are at the heart of the mission of engineering education journals such as IEEE Transactions on Education and IEEE-RITA. These journals provide a mechanism for disseminating and archiving well-written and well-documented results on research in innovations in engineering education. It is incumbent upon engineering educators to

ISSN 1932-8540 © IEEE

ensure that the research being published in engineering education journals is well documented, properly assessed, and therefore relevant to educators throughout the world.

As editor-in-chief of Transactions on Education, I look forward to working with the IEEE-RITA community to disseminate the best practices and innovative strategies that will ensure our students meet the needs of the new global engineering workplace.

Dr. Charles B. Fleddermann, Professor of Electrical and Computer Engineering; Associate Dean, School of Engineering; and Dean of Graduate Studies, University of New Mexico. Prof. Fleddermann earned his Ph.D. and M.S. degrees in electrical engineering from the University of Illinois at Urbana-Champaign, and a B.S. degree, also in electrical engineering from the University of Notre Dame. His research interests are in engineering education, photovoltaics, plasma processing of electronic materials, optical diagnostics of plasma systems, and engineering ethics. Dr. Fleddermann has been on the faculty at UNM for over twenty-two years and has taught a variety of courses at both the undergraduate and graduate levels.

ISSN 1932-8540 © IEEE