

---

# Editorial

The first issue of this journal was distributed to all the participants at the ASEE 2000 Conference. The response from many of them was (highly) positive; many engineering educators commended us for bringing out a journal like this in the area of science, math, engineering, and technology education. They felt that this journal can motivate educators in SMET areas to publish their works and thus provide a large scale dissemination of good teaching practices that can improve undergraduate education. A few of them asked, “Why another journal? What is different about the Journal of SMET Education: Innovations and Research?” We will answer this question in this editorial.

This journal will publish articles and case studies that can be used in their classrooms by faculty members and instructors in 2-year and 4-year colleges and universities. The journal is a fully refereed journal and all articles and case studies are subject to review by experts in the field. Every effort will be made to publish high quality articles and case studies that bring out new and innovative teaching techniques. The main focus of the journal is to bring high quality educational materials to instructors for use in their classrooms, and 2-color and 4-color schemes for illustrations are used throughout the journal so that the charts are legible, the photographs are visible, and the readability is excellent. The authors have the ability to order reprints of their articles and case studies so that they can distribute them to their classes and colleagues, thereby enriching the educational experiences of the students.

Most academic journals publish research work by faculty members and enhance the research projects of faculty members and graduate education. Very few outlets exist for publishing instructional materials that could be used in 2-year technical colleges and 4-year undergraduate programs. The articles and case studies in this journal are selected so that other instructors could directly use them to enhance their academic teaching mission.

This issue contains two articles and two case studies. The first article is by Ms. Sauer who discusses the Corporate and Foundation Alliance program. She outlines the five programs that have been considered to be exemplary in improving the teaching and learning in science, mathematics, engineering, and technology (SMET) education. All five “recognizees” for the CFA Recognition Program

2000 exhibit a plan, either stated or implied, for institutional or systemic change at the undergraduate level.

The first case study, “Wheelies on the Beltway,” by Mr. Northern brings to light a problem that happened at a distribution center and warehouse in Tennessee. He shows how basic control system and calculus concepts are used in solving this problem. He also provides an instructor’s guide that shows possible solutions.

The second article, “Digital Video, Learning Styles, and Student Understanding,” by Drs. Larkin-Hein and Zollman provides an example of how to set up an experimental and control group so that the advantage/disadvantage of using digital video techniques to improve physics education could be measured. This is a valuable article as the issue of assessment becomes critical to educators in the SMET disciplines. The results from the article showed that students who used digital video spent more time on the task and reported increased motivation. This article provides a well-tested methodology to assess the results of trying innovative technologies in classrooms.

The second case study, “Making an Impact at General Motors,” by Dr. McGrath discusses the issues and problems that were faced by the engineers and managers of the electric vehicle concept. The case study illustrates the need to consider issues such as reliability, maintainability, and support infrastructure in the design of a new product.

The mix of articles and case studies in this issue showcase the commitment of the developers of this journal, SEATEC (South East Advanced Technological Education Consortium) and LITEE (Laboratory for Innovative Technology and Engineering Education) to providing you, the instructor, with up-to-date materials. We hope you will agree with us that this journal fulfills a long-felt need for research-based instructional materials that you could use in your classrooms. Please share your thoughts, ideas, and experiences by publishing in this journal and writing comments on the articles and case studies that appear in this issue. ■

Chetan S. Sankar and P.K. Raju