

Editorial

Dear Colleagues,

Welcome to the Journal of STEM Education: Innovations and Research, Volume 11, Issues 1 & 2. This is the first in a series of Special Issues featuring results from research conducted for the Laboratory for Innovative Technology and Engineering Education (LITEE) Case Study National Dissemination Project. For this project, professors at universities across the nation conducted research using case studies developed by LITEE. Our continuing Special Issues will feature articles presenting the findings from these professors' work. This issue presents five such articles.

The first article, "Use of the LITEE Lorn Manufacturing Case Study in a Senior Chemical Engineering Unit Operations Laboratory," by Nithin Susan Abraham and James Patrick Abulencia, discusses the use of the Lorn Manufacturing Case Study as a means to incorporate ethics into the chemical engineering curriculum. The article also discusses the case study's potential to help students develop team working skills.

The next article, "Implementation of an Industrial-Based Case Study as the Basis for a Design Project in an Introduction to Mechanical Design Course," by Ellen Lackey, examines the Lorn Manufacturing Case Study in an Introduction to Mechanical Design course. The article reveals students' lack of exposure to projects typical to industrial settings, and discusses the implementation of the case study as the basis for a design project that will help give students the exposure they need to succeed in industry.

In "Impact of an Engineering Case Study in a High School Pre-Engineering Course," Eugene Rutz and Michelle Shafer discuss the use of the Della Steam Plant Case Study at the high school level. The authors used the case study to expose the students to the field of engineering and measured via survey the students' attitudes toward engineering and their abilities to solve engineering problems.

Next, Patrick Connolly examines the Yuquiyu Motors Case Study in "The Application of an Engineering Design and Information Systems Case Study in a Senior Level Product Data Management Course." The article discusses the case study as a way to help students grasp the topics of product data management and product lifecycle management, concepts with which students have struggled in the past.

Finally, in "Evaluation of the Effectiveness of the Integration of a LITEE Case Study for a Freshman Level Mechanical Engineering Course at the University of Toledo," Matthew Franchetti reports findings from his study of the integration of the Lorn Manufacturing case study into a mechanical engineering course. Franchetti's findings include improvements in attitudes toward engineering, higher-order cognitive skills, self-efficacy, team working, and communication skills.

I hope that you enjoy reading these articles and learning about the exciting work that is going on at these institutions. I am pleased to present the findings of these studies to you, and am confident that the work that these professors are doing is important to the advancement of STEM Education. Have a great summer!

Regards,
P.K. Raju