

Dear Readers,

Welcome to our next issue of the year (Volume 14, Issue 4) for the *Journal of STEM Education: Innovations and Research*. Readers will find that our authors' excellent research continues and we have five intriguing articles and a wonderful guest editorial in this issue that describe several new approaches to improving students' learning through hands-on experiences and exposure to real-world case studies.

I am pleased to begin this issue with a special guest editorial by Victoira Davis, of Auburn University, in which we are privileged to read about the growing prevalence of nanotechnology. Davis argues the need for nanotechnology to become a part of K-12, undergraduate and graduate STEM education.

In "Increasing High School Students' Interest in STEM Education Through Collaborative Brainstorming with Yo-Yos," Ning Fang, of Utah State University, explores a high school outreach event centered on brainstorming the physics concepts behind yo-yos. Through the study, the author examines how instructors can make brainstorming activities more effective to enhance student learning.

In "Pattern of Task Interpretation and Self-Regulated Learning Strategies of High School Students and College Freshmen During an Engineering Design Project," Oenardi Lawanto, Deborah Butler, Sylvie C. Cartier, Harry B. Santoso, Wade Goodridge, Kevin N. Lawanto, and David Clark examine patterns of self-regulated learning for high school students and college freshmen who were engaged in a design activity.

Margaret Pinnell, James Rowly, Sandi Preiss, Suzanne Franco, Rebecca Blust and Renee Beach discuss PK-12 STEM education in "Bridging the Gap Between Engineering Design and PK-12 Curriculum Development Through the Use of the STEM Education Quality Framework." They describe the implementation of a NSF sponsored program for PK-12 teachers designed to enhance knowledge about engineering innovation and design.

John Mativo, of the University of Georgia, brings us "Effects of Human Factors in Engineering and Design for Teaching Mathematics: A Comparison Study of Online and Face-to-Face at a Technical College." His study analyzes four characteristics of successful and unsuccessful students enrolled in basic mathematics courses at a technical college and how learning styles were affected based on face-to-face versus online interactions.

Finally, Adrie Koehler, Charles R. Feldhaus, Eugenia Fernandez and Stephen P. Hundley of Indiana University and Purdue University, describe a mixed-methods study investigating professionals moving from STEM careers to jobs in secondary education in "Alternative Certification Programs and Pre-Service Teacher Preparedness."

As the fall semester comes to a close, I hope all of our readers can look upon the last semester and see true accomplishments and learning among their students and use suggestions from our authors in future semesters. As always, we welcome comments, questions, and suggestions related to the journal, sent by email to jstemed@gmail.com.

Regards,
P.K. Raju
Editor-in-Chief