



Athens Journal of Education

Volume 3, Issue 3, August 2016

Special Issue on Sciences and Mathematics Education

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President's Message

The Athens Institute for Education and Research (ATINER) is pleased to announce the publication of a number of peer reviewed, open access journals of original research work. Most of the articles will be selected from the numerous papers that have been presented at the various annual international academic conferences organized by the different research divisions and units of the Athens Institute for Education and Research. The plethora of papers presented every year will enable the editorial board of each journal to select the best, and in so doing produce a top quality academic journal. In addition to papers presented, ATINER will encourage the independent submission of papers to be evaluated for publication.

The current issue is the third from the third volume of the *Athens Journal of Education* published by the [Education Research Unit](#) of the Athens Institute for Education and Research (ATINER).

The Head of the [Education Research Unit](#) is member of the Editorial Advisory Board. The Academic Members of the research unit are members of the Editorial Board and will assist the editor and the Editorial Advisory Board with the peer reviewing of all submitted papers. Currently, the academic members of the five research units consist of over 100 international experts from about 50 countries.

Gregory T. Papanikos

President

Athens Institute for Education and Research

Special Issue on Sciences and Mathematics Education: An Introduction

Quality education for all students is a major concern worldwide. Ultimately, high quality education requires highly qualified teachers, high quality instructional materials and methods that promote thinking among students. Further, societal and political contexts mitigate teaching and learning. The papers in this issue explore the complex dynamics affecting instruction and achievement in science and mathematics. Rossi and Fernandez-Crispin, Primo, Lobaton, Olivera, and Galavan discuss strategies to improve K-12 pre-service and in-service teachers' practice. Rossi describes a synergistic program for pre-service and inservice chemistry teachers. Fernandez-Crispin et al. evaluate aspects of a teacher training workshop where elementary teachers assume the roles of students and reflect on their learning in science. Cepeda and Schwebach, et al. report on programs to improve university science and mathematics instruction. Schwebach et al. focus on improving courses for biology majors through active learning strategies whereas Cepeda compares the effects of widget use and widget construction in physics and mathematics courses for teachers. Holmberg and Ranagården explore students' and teachers' views of mathematics with an emphasis on the roles textbooks play in shaping those views. They find that textbooks play an important and sometimes unanticipated role in framing both teachers' and students' concepts of mathematics. They argue that teachers' and students' voices are critically important considerations for the research community.

