

IJE

**M
S
T**

**International Journal of Education
in Mathematics, Science and
Technology**

Volume 4
Number 3
Year 2016

ISSN 2147-611X

EDITORIAL BOARD

Editors

Mack SHELLEY - Iowa State University, U.S.A.

Ismail SAHIN - Necmettin Erbakan University, Turkey

Section Editors

Arthur POWELL - Rutgers University, U.S.A.

Utkun AYDIN - MEF University, Turkey

Chun-Yen CHANG - National Taiwan Normal University, Taiwan

I. Ozgur ZEMBAT - Mevlana University, Turkey

Jacqueline T. MCDONNOUGH - Virginia Commonwealth University, U.S.A.

Meric OZGELDI - Mersin University, Turkey

Lina TANKELEVICIENE - Siauliai University, Lithuania

Niyazi ERDOGAN - Balikesir University, Turkey

Sandra ABEGGLEN - London Metropolitan University, U.K.

Editorial Board

Ann D. THOMPSON - Iowa State University, U.S.A

Bill COBERN - Western Michigan University, U.S.A.

Douglas B. CLARK - Vanderbilt University, U.S.A.

Gokhan OZDEMIR - Nigde University, Turkey

Hakan AKCAY - Yildiz Technical University, Turkey

Huseh-Hua CHUANG - National Sun Yat-sen University, Taiwan

Igor M. VERNER - Technion - Israel Institute of Technology, Israel

Ilhan VARANK - Yildiz Technical University, Turkey

James M. LAFFEY - University of Missouri, U.S.A.

Kamisah OSMAN - National University of Malaysia, Malaysia

Lynne SCHRUM - George Mason University, U.S.A.

Mary B. NAKHLEH - Purdue University, U.S.A.

Musa DIKMENLI - Necmettin Erbakan University, Turkey

Muteb ALQAHTANI - Rutgers University, U.S.A.

Ok-Kyeong KIM - Western Michigan University, U.S.A.

Pasha ANTONENKO - Oklahoma State University, U.S.A.

Paul ERNEST - University of Exeter, UK

Pornrat WATTANAKASIWICH - Chiang Mai University, Thailand

Robert E. YAGER - University of Iowa, U.S.A.

Sanjay SHARMA - Roorkee E&M Technology Institute, India

Sinan ERTEN - Hacettepe University, Turkey

Tsung-Hau JEN - National Taiwan Normal University, Taiwan

William F. MCCOMAS - University of Arkansas, U.S.A.

Yilmaz SAGLAM - Gaziantep University, Turkey

Technical Support

Selahattin ALAN - Selçuk University, Turkey

Ismail CELIK - Necmettin Erbakan University, Turkey

International Journal of Education in Mathematics, Science and Technology (IJEMST)

The International Journal of Education in Mathematics, Science and Technology (IJEMST) is a peer-reviewed scholarly online journal. The IJEMST is published quarterly in January, April, July and October. The IJEMST welcomes any papers on math education, science education and educational technology using techniques from and applications in any technical knowledge domain: original theoretical works, literature reviews, research reports, social issues, psychological issues, curricula, learning environments, research in an educational context, book reviews, and review articles. The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to the IJEMST. Access to the Journal articles is free to individuals, libraries and institutions through IJEMST's website.

Abstracting/ Indexing

The IJEMST is indexed by the following abstracting and indexing services: Ulrich Index, ASOS Index, Journal Seek, JournalRate, Directory of Research Journals Indexing (DRJI), Infobase Index, ResearchBib, Index Copernicus, TUBITAK ULAKBIM Dergipark, ERIH, Scientific Indexing Service (SIS), and Education Resources Information Center (ERIC).

Submissions

All submissions should be in electronic (.Doc or .Docx) format. Submissions in PDF and other non-editable formats are not acceptable. Manuscripts can be submitted through the journal website. All manuscripts should use the latest APA style. The manuscript template for formatting is available on the journal website.

Contact Info

International Journal of Education in Mathematics, Science and Technology (IJEMST)

Email: ijemst@gmail.com

Web: <http://www.ijemst.com>

TABLE OF CONTENTS

Using an Assessment of Early Mathematical Knowledge and Skills to Inform Policy and Practice: Examples from the Early Grade Mathematics Assessment <i>Linda M. Platas, Leanne R. Ketterlin-Geller, Yasmin Sitabkhan</i>	163
Mathematically Gifted High School Students' Approaches to Developing Visual Proofs (VP) and Preliminary Ideas about VP <i>Isikhan Ugurel, H. Sevgi Morali, Ozge Karahan, Burcak Boz</i>	174
Investigating the Effect of Origami Instruction on Pre-service Teachers' Spatial Ability and Geometric Knowledge for Teaching <i>Peter Akayuure, S. K. Asiedu-Addo, Victor Alebna</i>	198
Using Data Mining Techniques Examination of the Middle School Students' Attitude towards Mathematics in the Context of Some Variables <i>Feriha Hande Idil, Serkan Narli, Esra Aksoy</i>	210
An Examination of Cross Sectional Change in Student's Metaphorical Perceptions towards Heat, Temperature and Energy Concepts <i>Harun Celik</i>	229
Communities of Practice in Online Learning Environments: A Sociocultural Perspective of Science Education <i>Niyazi Erdogan</i>	246