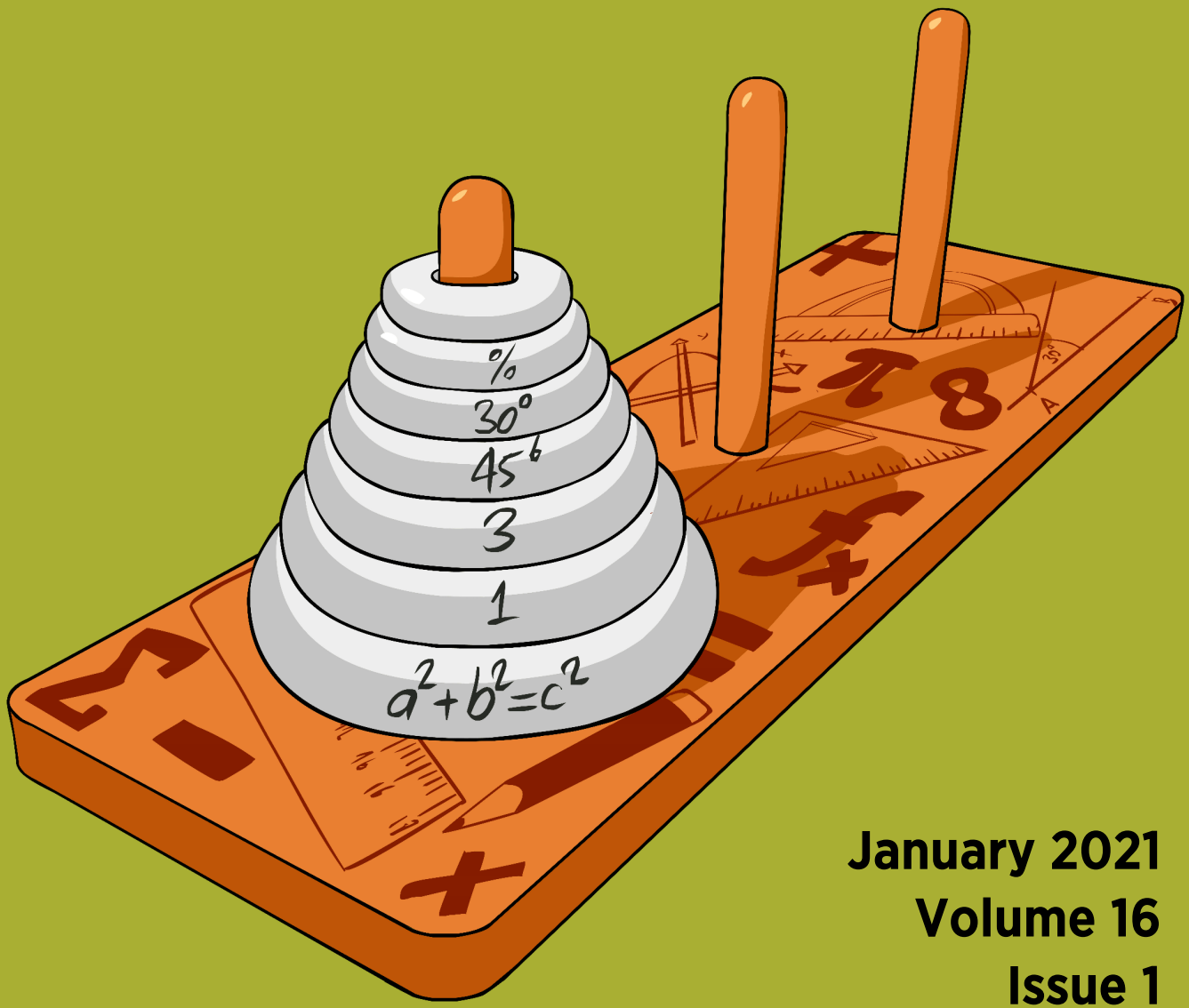
ISSN: 1306-3030

INTERNATIONAL ELECTRONIC JOURNAL OF MATHEMATICS EDUCATION



January 2021
Volume 16
Issue 1

Published by: **Modestum Publishing LTD**

Publication Office: 29 Gildredge Road, Eastbourne, East Sussex, BN21 4RU, United Kingdom

Phone: + 44 7432 276676

Email: publications@modestum.co.uk

Publisher: https://modestum.co.uk

Journal Web: https://www.iejme.com

© 2006-2021. All rights reserved by Modestum Publishing LTD. Copyright for Open Access Content is Retained by Authors. Also, authors continue to hold the copyrights of their own papers by acknowledging that their papers are originally published in the International Electronic Journal of Mathematics Education. Hence, articles published are licensed under a "Creative Commons Attribution 4.0 International License."

ISSN: 1306-3030 (Online)

INTERNATIONAL ELECTRONIC JOURNAL OF MATHEMATICS EDUCATION

January 2021
Volume 16
Issue 1

MODESTUM

This page is intentionally left blank

INTERNATIONAL ELECTRONIC JOURNAL OF MATHEMATICS EDUCATION

International Electronic Journal of Mathematics Education (IEJME) is a peer-reviewed, online, open access, academic journal devoted to disseminate new research and theory in the field of mathematics education.

IEJME is published three times a year, in January, May and October.

IEJME aims to stimulate discussions at all levels of mathematics education through disseminating significant and innovative scholarly studies that are of value to the international research communities. The journal welcomes articles focusing on all aspects of mathematics education including empirical, theoretical, methodological, and philosophical works that have a perspective wider than local or national interest.

IEJME publishes only original scholarly works. Manuscripts that are indeed a derivative or replication /duplication (if there is not clear reason, justification) of previous work are not accepted and will not be published in IEJME. Please do not submit the same manuscript simultaneously or separately to IEJME with another journal. In such cases the responsibility solely rests with the author(s).

Manuscripts are reviewed initially by the Editors and only those meeting the aims and scope of the journal will be sent for outside review. Each manuscript is reviewed by at least two referees.

IEJME operates a strictly blinded peer review process in which the reviewer's name is withheld from the author and the author's name from the reviewer.

As an initial consideration, all manuscripts submitted for review are expected to be free from language errors and must be written and formatted strictly by following the manuscript preparation guidelines of the journal. Manuscripts that are not entirely written according to the guidelines and/or do not reflect an expert use of the English language will not be considered for publication and will not be sent to any of the journal reviewers for evaluation. It is completely the author's responsibility to comply with the rules and check for any errors. Thus, all necessary actions should be taken by the author(s) before a manuscript is submitted to the journal.

Non-English speaking authors are encouraged to use language editing services to have their manuscripts checked and edited for including grammar, sentence structure, content clarity, formatting, punctuation, and spelling by native speakers/language experts.

By submitting a new manuscript, author(s) ensure that the manuscript:

- is suitable for the aims and scope of the journal,
- has not been previously published (in whole or part), nor is currently under evaluation for publication elsewhere,
- is prepared in accordance with the publication ethics of the journal,
- is approved by all co-author(s) and corresponding author is authorized to manage all correspondences on behalf of all co-author(s),

- adheres to the stylistic, bibliographic and language standards outlined in the Author Guidelines of the journal.

Before the manuscript is peer-reviewed by experts, all incoming manuscript submissions are subject to an initial screening by the editors. At this stage, editors may return the manuscript to authors for adjustments or may reject the manuscript without further evaluation. At any stage during peer review, editors may assign section editors/reviewers, request revisions from authors, or make a final decision regarding the submission. All submitted manuscripts are assigned a unique manuscript ID by the submission system. This ID should be stated in any communication with editorial or support staff.

The following article types are published in IEJME:

- research articles,
- review articles,
- book reviews,
- interviews.

IEJME is indexed and abstracted by:

- EBSCO Education Source Complete
- ERIC
- ERIH PLUS
- Cabell's Directory Index
- Genamics JournalSeek
- Mathematics Education/Didactics Database
- The Mathematics Information Service (fidmath)
- Mathedjournals
- Mathguide
- NCM
- OCLC WorldCat
- EdNA Online Database
- ResearchGate
- ROAD
- Crossref
- Google Scholar

Authors should submit their manuscripts online via https://www.editorialpark.com/iejme. Manuscripts are accepted only in Word format.

EDITORIAL BOARD

Editors

Melanie Platz, Pedagogical University Professor of Mathematics Education in Primary Education, Pedagogical University of Tyrol, Innsbruck, Austria

Scott A. Courtney, College of Education, Health, and Human Services, Kent State University, USA

Arturo García-Santillán, UCC Business School, Universidad Cristóbal Colón, Mexico

Leong Kwan Eu, Department of Mathematics and Science Education, University of Malaya, 50603 Kuala Lumpur, Malaysia

Zehra Ersozlu, Mathematics Education, Faculty of Arts and Education, School of Education, Deakin University, Geelong Waurn Ponds Campus, Locked Bag 20000, Geelong, VIC 3220, Australia

Special Issue Editors

Francisco Regis Vieira Alves, Federal Institute of Science and Technology of Ceara, Brazil

Book Review Editor

Yujin Lee, Indiana University-Purdue University, Indianapolis, USA

Editorial Board Members

Abdul Halim Abdullah, Universiti Teknologi Malaysia, Malaysia

Ali Bicer, University of Wyoming, USA

Bárbara Palharini, Northern Paraná State University, Brazil

Belén Giacomone, Granada University, Spain

Carmen Batanero, Universidad de Granada, Spain

Hamide Dogan-Dunlap, The University of Texas at El Paso, USA

Iran Abreu Mendes, Universidade Federal do Pará, Brazil

Ivanildo Carvalho, Universidade Federal de Pernambuco, Brazil

Jogymol K. Alex, Walter Sisulu University, South Africa

Karen Junqueira, University of the Free State, South Africa

Lyn English, Queensland University of Technology, Australia

Man-Fung Lo, The Education University of Hong Kong, Hong Kong

Marcos Formigosa, Universidade Federal do Pará, Brazil

Mashau Nkhangweni Lawrence, Tshwane University of Technology, South Africa

Merlin John, Walter Sisulu University, South Africa

Miftachul Huda, Universiti Teknologi Malaysia (UTM), Malaysia

Mildred A. Sebastian, Cavite State University, Philippines

Mourat A. Tchoshanov, The University of Texas at El Paso, USA

Patricia Patrick, Texas Tech University, USA

Peter Van Petegem, University of Antwerp, Belgium

Rachel A. Ayieko, Duquesne University, USA

Raiva Vladimir, Universidade Federal do Pará, Brazil

Roldan C. Bangalan, St. Paul University Philippines, Philippines

Souza Leandro, Universidade Federal de Uberlândia, Brazil

Thomas E Ricks, Lousiana State University, USA

Zarith Sofiah Binti Othman, Universiti Teknologi MARA (UiTM), Malaysia

Managing Editor

Tim Heider, Modestum Publishing LTD

CONTENTS

Individual Differences in Conceptual and Procedural Fraction Knowledge: What Makes the Difference and What Does it Look Like? em0615
Katja Lenz, Gerald Wittmann
https://doi.org/10.29333/iejme/9282

Incorporating Geogebra into Teaching Circle Properties at High School Level and it's Comparison with the Classical Method of Teaching em0616
Vesa Mollakuqe, Shpetim Rexhepi, Egzona Iseni
https://doi.org/10.29333/iejme/9283

A Suggestion of a Framework: Conceptualization of the Factors That Affect Technology Integration in Mathematics Education em0617
Burcin Ince-Muslu, Ayten Erduran
https://doi.org/10.29333/iejme/9292

Secondary School Mathematics Teachers' Instructional Practices in the Integration of Mathematics Analysis Software (MAS) em0618
Mailizar Mailizar, Lianghuo Fan
https://doi.org/10.29333/iejme/9293

Preschool In-service Teachers and Geometry: Attitudes, Beliefs and Knowledge em0619
Zvia Markovits, Dorit Patkin
https://doi.org/10.29333/iejme/9303

Teachers Knowledge Mobilized in Geometry Lessons and Contingency Situations em0620
Bárbara Silva Gumiero, Vinícius Pazuch
https://doi.org/10.29333/iejme/9371

Lesson Plans as a Mirror: A Close Look at Planning of Work with Underachieving Students em0621
Raisa Guberman, Dina Tsybulsky
https://doi.org/10.29333/iejme/9375

"It does not Mean that They Cannot Do Mathematics": Beliefs about Mathematics Learning Difficulties em0622
Shemunyenge Taleiko Hamukwaya, Çiğdem Haser
https://doi.org/10.29333/iejme/9569

A Scale Development Study Intended for Mathematics Teacher Candidates: Mathematical Visualization Perception Scale em0623
Aziz Ilhan, Tayfun Tutak
https://doi.org/10.29333/iejme/9578

Two Primary Teachers Developing their Teaching Problem-solving during Three-year In-service Training em0624

Päivi Maria Portaankorva-Koivisto, Anu Tuulikki Laine, Maija Ahtee

https://doi.org/10.29333/iejme/9617

Investigating Students' Processes of Noticing and Interpreting Syntactic Language Features in Word Problem Solving through Eye-Tracking em0625

Jennifer Dröse, Susanne Prediger, Philipp Neugebauer, Renate Delucchi Danhier, Barbara Mertins

https://doi.org/10.29333/iejme/9674