Journals of Interest - Mathematics and Science Education

August/September 2013

TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Journal</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Researcher</td>
<td>2</td>
</tr>
<tr>
<td>Volume 42, Issue 6</td>
<td>2</td>
</tr>
<tr>
<td>Educational Studies in Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Volume 84, Issue 1</td>
<td>4</td>
</tr>
<tr>
<td>Mathematical Thinking and Learning</td>
<td>5</td>
</tr>
<tr>
<td>Volume 15, Issue 3</td>
<td>5</td>
</tr>
<tr>
<td>Journal of Research in Science Teaching</td>
<td>6</td>
</tr>
<tr>
<td>Volume 50, Issue 6</td>
<td>6</td>
</tr>
<tr>
<td>Volume 50, Issue 7</td>
<td>7</td>
</tr>
<tr>
<td>International Journal of Science Education</td>
<td>8</td>
</tr>
<tr>
<td>Volume 35, Issues 13-14</td>
<td>8</td>
</tr>
<tr>
<td>Science Education</td>
<td>9</td>
</tr>
<tr>
<td>Volume: 97, Issue 5</td>
<td>9</td>
</tr>
<tr>
<td>International Journal of Mathematical Education in Science and Technology</td>
<td>11</td>
</tr>
<tr>
<td>Volume 44, Issue 6</td>
<td>11</td>
</tr>
<tr>
<td>The Journal of Mathematical Behavior</td>
<td>13</td>
</tr>
<tr>
<td>Volume 32, Issue 3</td>
<td>13</td>
</tr>
<tr>
<td>Research in Mathematics Education</td>
<td>17</td>
</tr>
<tr>
<td>Volume 15, Issues 1</td>
<td>17</td>
</tr>
<tr>
<td>Journal for Research in Mathematics Education</td>
<td>18</td>
</tr>
<tr>
<td>Volume 42, Issue 4</td>
<td>18</td>
</tr>
<tr>
<td>Science</td>
<td>19</td>
</tr>
<tr>
<td>Volume 341, Issue 6148</td>
<td>19</td>
</tr>
</tbody>
</table>
Features Articles

William G. Tierney
2013 AERA Presidential Address: Beyond the Ivory Tower: The Role of the Intellectual in Eliminating Poverty

Demetra Kalogrides and Susanna Loeb
Different Teachers, Different Peers: The Magnitude of Student Sorting Within Schools

Janet M. Dubinsky, Gillian Roehrig, and Sashank Varma
Infusing Neuroscience Into Teacher Professional Development

Marcus A. Winters and Joshua M. Cowen

Sharon L. Weinberg and Marc A. Scott
The Impact of Uncapping of Mandatory Retirement on Postsecondary Institutions
Educational Studies in Mathematics
August 2013

Articles
Relational engagement: Proportional reasoning with bilingual Latino/a students
Higinio Dominguez, Carlos A. LópezLeiva, Lena Licón Khisty

School mathematics registers in a context of low academic expectations
Hauke Straehler-Pohl, Saínza Fernández, Uwe Gellert, Lourdes Figueiras

The objectification of the right-angled triangle in the teaching of the Pythagorean Theorem: an empirical investigation
Andreas Moutsios-Rentzos, Panagiotis Spyrou, Alexandra Peteinara

Critical mathematics discourse in a high school classroom: examining patterns of student engagement and resistance
Andrew Brantlinger

Explaining the mathematical creativity of a young boy: an interdisciplinary venture between mathematics education and psychoanalysis
Götz Krummheuer, Marianne Leuzinger-Bohleber, Marion Müller-Kirchof, Melanie Münz, Rose Vogel

Commentary: The whole is greater than the sum of its parts
Michal Tabach

Challenges in the innovation of mathematics education for young children
Bert van Oers

Learning about learner errors in professional learning communities
Karin Brodie

Mathematical situations of play and exploration
Rose Vogel
Volume 84, Issue 1
September 2013

Articulating syntactic and numeric perspectives on equivalence: the case of rational expressions
Armando Solares, Carolyn Kieran

Epistemic schemes and epistemic states. A study of mathematics convinacement in elementary school classes
Mirela Rigo-Lemini

How preservice teachers interpret and respond to student errors: ratio and proportion in similar rectangles
Ji-Won Son

An exploratory study of pre-service middle school teachers’ knowledge of algebraic thinking
Marta T. Magiera, Leigh A. van den Kieboom, John C. Moyer

An ideology critique of the use-value of mathematics
Alexandre Pais

Contradiction and conflict between ‘leading identities’: becoming an engineer versus becoming a ‘good muslim’ woman
Laura Black, Julian Williams

Troubling “understanding mathematics in-depth”: Its role in the identity work of student-teachers in England
Sarmin Hossain, Heather Mendick, Jill Adler

Schematic representations in arithmetical problem solving: Analysis of their impact on grade 4 students
Annick Fagnant, Joëlle Vlassis

Book Review: A Book about Russian Mathematics Education
Vadim Kaimanovich
Mathematical Thinking and Learning

Volume 15, Issue 3
2013

Articles
Relationships between Gender, Cognitive Ability, Preference, and Calculus Performance
Erhan Selcuk Haciomeroglu, Eric Chicken & Juli K. Dixon pages 175-189

Generating Scenarios of Division as Sharing and Grouping: A Study of Japanese Elementary and University Students
Shigehiro Kinda pages 190-200

Prospective Secondary Mathematics Teachers’ Understanding and Cognitive Difficulties in Making Connections among Representations
Kyunghae Moon, Mary E. Brenner, Bill Jacob & Yukari Okamoto pages 201-227
Journal of Research in Science Teaching

Volume 50, Issue 6
August 2013

Issue Information

Issue Information (pages fm1–fmiv)
Article first published online: 19 JUL 2013 | DOI: 10.1002/tea.21044

Research Articles

Analyzing change in students' gene-to-evolution models in college-level introductory biology (pages 639–659)
Joseph T. Dauer, Jennifer L. Momsen, Elena Bray Speth, Sasha C. Makohon-Moore and Tammy M. Long
Article first published online: 25 JUN 2013 | DOI: 10.1002/tea.21094

Self-regulated learning study strategies and academic performance in undergraduate organic chemistry: An investigation examining ethnically diverse students (pages 660–676)
Enrique J. Lopez, Kiruthiga Nandagopal, Richard J. Shavelson, Evan Szu and John Penn
Article first published online: 11 JUL 2013 | DOI: 10.1002/tea.21095

Students' conceptual change in electricity and magnetism using simulations: A comparison of cognitive perturbation and cognitive conflict (pages 677–698)
Bekele Gashe Dega, Jeanne Kriek and Temesgen Fereja Mogese
Article first published online: 10 JUL 2013 | DOI: 10.1002/tea.21096

An investigation of college chemistry students' understanding of structure–property relationships (pages 699–721)
Melanie M. Cooper, Leah M. Corley and Sonia M. Underwood
Article first published online: 3 JUL 2013 | DOI: 10.1002/tea.21093

How do students in an innovative principle-based mechanics course understand energy concepts? (pages 722–747)
Lin Ding, Ruth Chabay and Bruce Sherwood
Article first published online: 10 JUL 2013 | DOI: 10.1002/tea.21097
Making predictions about chemical reactivity: Assumptions and heuristics (pages 748–767)
Jenine Maeyer and Vicente Talanquer
Article first published online: 3 JUL 2013 | DOI: 10.1002/tea.21092

Volume 50, Issue 7
September 2013

Issue Information
Issue Information (pages fmi–fmiv)
Article first published online: 29 JUL 2013 | DOI: 10.1002/tea.21045

Research Articles
Changes in participants' scientific attitudes and epistemological beliefs during an astronomical citizen science project (pages 773–801)
C. Aaron Price and Hee-Sun Lee
Article first published online: 11 JUN 2013 | DOI: 10.1002/tea.21090

Science as a classed and gendered endeavor: Persistence of two white female first-generation college students within an undergraduate science context (pages 802–825)
Rachel E. Wilson and Julie Kittleson
Article first published online: 17 APR 2013 | DOI: 10.1002/tea.21087

Science identity trajectories of latecomers to science in college (pages 826–857)
Phoebe A. Jackson and Gale Seiler
Article first published online: 24 APR 2013 | DOI: 10.1002/tea.21088

Scaffolding learning from molecular visualizations (pages 858–886)
Hsin-Yi Chang and Marcia C. Linn
Article first published online: 31 MAY 2013 | DOI: 10.1002/tea.21089
International Journal of Science Education

Volume 35, Issues 13-14
2013

Original Articles

Epistemologies in the Text of Children's Books: Native- and non-Native-authored books
Morteza Dehghani, Megan Bang, Douglas Medin, Ananda Marin, Erin Leddon & Sandra Waxman pages 2133-2151

Exploring the Development of College Students' Situational Interest in Learning Science
Huann-shyang Lin, Zuway-R Hong & Ya-Chun Chen pages 2152-2173

Learning from Chemical Visualizations: Comparing generation and selection
Zhihui Helen Zhang & Marcia C. Linn pages 2174-2197

Preservice Secondary Science Teachers’ Teaching and Reflections During a Teacher Education Program
Anita Roychoudhury & Diana Rice pages 2198-2225

Science and Scientific Curiosity in Pre-school—The teacher's point of view
Ornit Spektor-Levy, Yael Kesner Baruch & Zemira Mevarech pages 2226-2253

Student Engagement with Artefacts and Scientific Ideas in a Laboratory and a Concept-Mapping Activity
Karim Mikael Hamza & Per-Olof Wickman pages 2254-2277

Addressing the Lack of Measurement Invariance for the Measure of Acceptance of the Theory of Evolution
Amy Wagler & Ron Wagler pages 2278-2298
Science Education

Volume: 97, Issue 5
September 2013

Research Articles

Writing to Learn by Learning to Write During the School Science Laboratory: Helping Middle and High School Students Develop Argumentative Writing Skills as They Learn Core Ideas (pages 643–670)
VICTOR SAMPSON, PATRICK ENDERLE, JONATHON GROOMS and SHELBIE WITTE
Article first published online: 14 AUG 2013 | DOI: 10.1002/sce.21069

Conceptualizing the Science Curriculum: 40 Years of Developing Assessment Frameworks in Three Large-Scale Assessments (pages 671–694)
PER MORTEN KIND
Article first published online: 14 AUG 2013 | DOI: 10.1002/sce.21070

Linguistic Challenges in Mendelian Genetics: Teachers’ Talk in Action (pages 695–722)
KARIN THÖRNE, NIKLAS M. GERICKE and MARIANA HAGBERG
Article first published online: 30 JUL 2013 | DOI: 10.1002/sce.21075

Transforming Misconceptions: Using Transformative Experience to Promote Positive Affect and Conceptual Change in Students Learning About Biological Evolution (pages 723–744)
BENJAMIN C. HEDDY and GALE M. SINATRA
Article first published online: 14 AUG 2013 | DOI: 10.1002/sce.21072

Learning

The Effects of Writing-to-Learn Activities on Elementary Students’ Conceptual Understanding: Learning About Force and Motion Through Writing to Older Peers (pages 745–771)
YING-CHIH CHEN, BRIAN HAND and LEAH McDOWELL
Article first published online: 14 AUG 2013 | DOI: 10.1002/sce.21067
Science Teacher Education
Exploring the Visuospatial Challenge of Learning About Day and Night and the Sun's Path (pages 772–796)
DAVID HEYWOOD, JOAN PARKER and MARK ROWLANDS
Article first published online: 14 AUG 2013 | DOI: 10.1002/sce.21071

The Books
ELLEN LITKOWSKI and MAGGIE RENKEN
Article first published online: 16 MAY 2013 | DOI: 10.1002/sce.21063
International Journal of Mathematical Education in Science and Technology
Volume 44, Issue 6
2013

Original Articles

Factors influencing students’ perceptions of their quantitative skills
Kelly E Matthews, Yvonne Hodgson & Cristina Varsavskypages 782-795

Exercising QS: quantitative skills in an exercise science course
T.M. Wilsonpages 796-807

It's not maths; it's science: exploring thinking dispositions, learning thresholds and mindfulness in science learning
R. Quinnell, R. Thompson & R.J. LeBardpages 808-816

Infusing quantitative approaches throughout the biological sciences curriculum

Scientists and mathematicians collaborating to build quantitative skills in undergraduate science
Leanne Rylands, Vilma Simbag, Kelly E. Matthews, Carmel Coady & Shaun Belwardpages 834-845

A hybrid model of mathematics support for science students emphasizing basic skills and discipline relevance
Deborah C. Jackson & Elizabeth D. Johnsonpages 846-864

Engaging life-sciences students with mathematical models: does authenticity help?
Leon Poladianpages 865-876
Using student feedback to improve student attitudes and mathematical confidence in a first year interdisciplinary quantitative course: from the ashes of disaster!
Yvette Everingham, Emma Gyuris & Justin Sexton pages 877-892

Mathematical literacy in Plant Physiology undergraduates: results of interventions aimed at improving students' performance
Francisca Vila & Amparo Sanz pages 893-904

Classroom Notes
Enjoyment of Euclidean planar triangles
V.K. Srinivasan pages 905-921

Exploring dissections of rectangles into right-angled triangles
Martin Griffiths pages 921-927

The use of graphs in specific situations of the initial conditions of linear differential equations
Gabriela Buendía & Francisco Cordero pages 927-937

How long is my toilet roll? – a simple exercise in mathematical modelling
Peter R. Johnston pages 938-950

Conic sections and the discovery of a novel curve using differential equations
The Journal of Mathematical Behavior

Volume 32, Issue 3
September 2013

Articles

Issues in theorizing mathematics learning and teaching: A contrast between learning through activity and DNR research programs Original Research Article
Pages 281-294
Martin A. Simon

Teacher's reflections on experimenting with technology-enriched inquiry-based mathematics teaching with a preplanned teaching unit Original Research Article
Pages 295-308
Markus Hähkiöniemi

Enhancing pre-service teachers' fraction knowledge through open approach instruction Original Research Article
Pages 309-330
Cheng-Yao Lin, Jerry Becker, Yi-Yin Ko, Mi-Ran Byun

A power meaning of multiplication: Three eighth graders' solutions of Cartesian product problems Original Research Article
Pages 331-352
Erik S. Tillema

Tracing Robert's use of representations to solve counting problems: A 16-year case study Original Research Article
Pages 353-363
Anoop Ahluwalia

Decoding a proof of Fermat's Little Theorem via script writing
Original Research Article
Pages 364-376
Boris Koichu, Rina Zazkis
Multiple levels of metacognition and their elicitation through complex problem-solving tasks Original Research Article
Pages 377-396
Young Rae Kim, Mi Sun Park, Tamara J. Moore, Sashank Varma

A geometry teacher's use of a metaphor in relation to a prototypical image to help students remember a set of theorems Original Research Article
Pages 397-414
Gloriana González

The role of problem representation and feature knowledge in algebraic equation-solving Original Research Article
Pages 415-423
Julie L. Booth, Jodi L. Davenport

Teaching and learning mathematics in the collective Original Research Article
Pages 424-433
Jo Towers, Lyndon C. Martin, Brenda Heater

The impact of using multiple modalities on students' acquisition of fractional knowledge: An international study in embodied mathematics across semiotic cultures Original Research Article
Pages 434-449
Iman C. Chahine

Young children's recognition of quantitative relations in mathematically unspecified settings Original Research Article
Pages 450-460
Jake A. McMullen, Minna M. Hannula-Sormunen, Erno Lehtinen

Covariational reasoning and invariance among coordinate systems Original Research Article
Pages 461-473
Kevin C. Moore, Teo Paoletti, Stacy Musgrave
The mathematics teacher: Between solving equations and the meaning of it all Original Research Article
Pages 474-480
Shlomo Vinner

The mathematical beliefs and behavior of high school students: Insights from a longitudinal study Original Research Article
Pages 481-493
John M. Francisco

Constructs of engagement emerging in an ethnomathematically-based teacher education course Original Research Article
Pages 494-507
Igor Verner, Khayriah Massarwe, Daoud Bshouty

Grade-continuum trajectories of four known probabilistic misconceptions: What are students’ perceptions of self-efficacy in completing probability tasks? Original Research Article
Pages 508-526
Paul Kustos, Jeremy Zelkowski

Flexible thinking and met-befores: Impact on learning mathematics Original Research Article
Pages 527-537
Mercedes A. McGowen, David O. Tall

The fractional knowledge and algebraic reasoning of students with the first multiplicative concept Original Research Article
Pages 538-563
Amy J. Hackenberg

Knowing students as mathematics learners and teaching numbers 10–100: A case study of four 1st grade teachers from Romania Original Research Article
Pages 564-576
Madalina Tanase, Jian Wang
An exploration of students’ errors in derivatives in a university of technology Original Research Article
Pages 577-592
Sibawu Witness Siyepu

Contradictions and uncertainty in scientists’ mathematical modeling and interpretation of data Original Research Article
Pages 593-612
Wolff-Michael Roth

Prerequisite algebra skills and associated misconceptions of middle grade students: A review Original Research Article
Pages 613-632
Sarah B. Bush, Karen S. Karp

An “inverse” relationship between mathematics identities and classroom practices among early career elementary teachers: The impact of accountability Original Research Article
Pages 633-648
Joan Gujarati
Research in Mathematics Education

**Volume 15, Issues 1**
2013

**Research Papers**
The mathematical formatting of climate change: critical mathematics education and post-normal science
Richard Barwell
pages 1-16

Students' perceptions of assessment in undergraduate mathematics
Paola Iannone & Adrian Simpson
pages 17-33

Teaching the substitutive conception of the equals sign
Ian Jones, Matthew Inglis, Camilla Gilmore & Rhys Evans
pages 34-49

Perceived parental influence and students' dispositions to study mathematically-demanding courses in Higher Education
Irene Kleanthous & Julian Williams
pages 50-69

Emotion and disaffection with school mathematics
Gareth Lewis
pages 70-86

**Current Report**
Women teachers' experiences of learning mathematics
Gill Adams
pages 87-88

**Book Review**
Mathematical thinking: how to develop it in the classroom
Rina Zazkis & Dov Zazkis
pages 89-95
Journal for Research in Mathematics Education

Volume 42, Issue 4

Generalizing-Promoting Actions: How Classroom Collaborations Can Support Students’ Mathematical Generalizations
Amy B. Ellis
Page 308

Anchoring Students’ Metaperspective Discussions of History in Mathematics
Uffe Thomas Jankvist
Page 346
Research Articles

Lentiviral Hematopoietic Stem Cell Gene Therapy in Patients with Wiskott-Aldrich Syndrome
Alessandro Aiuti, Luca Biasco, Samantha Scaramuzzza, Francesca Ferrua, Maria Pia Cicaless, Cristina Baricordi, Francesca Dionisio, Andrea Calabria, Stefania Giannelli, Maria Carmina Castiello, Marita Bosticardo, Costanza Evangelio, Andrea Assanelli, Miriam Casiraghi, Sara Di Nunzio, Luciano Callegaro, Claudia Benati, Paolo Rizzardi, Danilo Pellin, Clelia Di Serio, Manfred Schmidt, Christof Von Kalle, Jason Gardner, Nalini Mehta, Victor Neduva, David J. Dow, Anne Galy, Roberto Miniero, Andrea Finocchi, Ayse Metin, Pinaki P. Banerjee, Jordan S. Orange, Stefania Galimberti, Maria Grazia Valsecchi, Alessandra Biffi, Eugenio Montini, Anna Villa, Fabio Ciceri, Maria Grazia Roncarolo, and Luigi Naldini
Science 23 August 2013: 1233151
Published online 11 July 2013

Lentiviral Hematopoietic Stem Cell Gene Therapy Benefits Metachromatic Leukodystrophy
Alessandra Biffi, Eugenio Montini, Laura Lorioli, Martina Cesani, Francesca Fumagalli, Tiziana Plati, Cristina Baldoli, Sabata Martino, Andrea Calabria, Sabrina Canale, Fabrizio Benedicenti, Giuliana Vallanti, Luca Biasco, Simone Leo, Nabil Kabbara, Gianluigi Zanetti, William B. Rizzo, Nalini A. L. Mehta, Maria Pia Cicaless, Miriam Casiraghi, Jaap J. Boelens, Ubaldo Del Carro, David J. Dow, Manfred Schmidt, Andrea Assanelli, Victor Neduva, Clelia Di Serio, Elia Stupka, Jason Gardner, Christof von Kalle, Claudio Bordignon, Fabio Ciceri, Attilio Rovelli, Maria Grazia Roncarolo, Alessandro Aiuti, Maria Sessa, and Luigi Naldini
Science 23 August 2013: 1233158
Published online 11 July 2013