Teaching for Excellence and Equity in Mathematics

Teachers’ information session for potential TEEM players (writers or reviewers)

Presented/facilitated by

TEEM editors (teem@todos-math.org),
editorial panelists, and authors

slides (already uploaded to conference app/website)

updated by Larry Lesser from his 2013 TODOS Live webinar
which can be viewed TODOS’ TEEM page
Which of these apply to you?

- I want to learn about *TEEM’s* review process (as a possible reviewer and/or author)
- I want to learn what it takes to write for *TEEM*
- I hope to find potential (K-12 or university) collaborators at this conference
- I have ideas I’d like feedback on at this workshop
- I don’t have article ideas yet, but am looking forward to this workshop sparking some!
abstract

TODOS’ national peer-reviewed journal *TEEM (Teaching for Excellence and Equity in Mathematics;* http://www.todos-math.org/teem) seeks more contributions from teachers and this session especially targets teachers with insights and activities worth sharing (every teacher has them) beyond their school but who may lack experience putting it into publishable form. Researchers and those considering doing an occasional review of an submitted article are also welcome.

*TEEM* Associate Editor Larry Lesser will overview identifying a topic, forming collaborations, searching the literature, organizing a paper's sections, and navigating the submission-review-revision trajectory. Then, attendees will have a chance for in-person real-time feedback in small groups from *TEEM* Editor Marta Civil and Editorial Board members, so start brainstorming ideas and bring ‘em to the table. We’ll be TEEMing with enthusiasm!
Hot off the press!

a copy of *TEEM* 9 should be in your conference bag!

Teaching for Excellence and Equity in Mathematics
TODOS’ TEEM page has issues & information
my background

• full-time HS teacher for 2 years
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• I’ve published a lot as a university professor
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• I’ve twice had work published by TEEM
• I’ve twice had work rejected by TEEM
Quick history of *TEEM*

- 2003: founding of TODOS: Mathematics for ALL
- 2008: refereed journal proposed to TODOS Board by founding co-editors (Lesser, Anhalt, Leiva)
- 2009: issue #1 released with by papers from *Noticias* internally selected and adapted for *TEEM*; external review process set for future issues; issues published in subsequent years except 2014
- 2011: issues made available to all (except that only TODOS members can see current issue); Editorial Panel created to help collect and synthesize external referee reports
- 2012: additional call for papers written by and for classroom teachers and/or teacher educators
- 2013: TODOS LIVE Webinar about *TEEM*
- 2016: first “special issue” (math ed through social justice lens); first workshop (TODOS Conference)
Reviewing for *TEEM*: How

- To **join** the referee pool, just email teem@todos-math.org
  (1) name, affiliation, and contact information, (2) grade levels of teaching or research experience, (3) areas of interest/expertise

- You’re asked to do only 1 review/year and can let us know if a conflict of interest, schedule, or background would keep you from doing it within 3-6 weeks

- The author will never know which referees reviewed his/her paper

- To guide and structure the process, you’ll be given a **form**
TEEM Referee Reviewer form

1. From your perspective, briefly describe the main purpose of the article.

2. Choose one of the 4 options for your overall recommendation for the article:
   ___ accept as is (well-written and great fit with the TEEM and TODOS mission)
   ___ accept under the condition that the author makes some (minor) changes (this will be overseen by the editors without further review by external referees)
   ___ reject, but encourage the author to submit a revision that will go through the refereeing process again
   ___ reject and do not encourage the author to submit a revision

3. Briefly state your reasons for the recommendation you gave in #2. Your reason should refer to overall aspects of the paper (such as the attributes in item #4). Be sure to indicate the article’s key strengths and weaknesses (with an indication of if you think the weaknesses can be “fixed” if a revision were submitted).
4. For each criterion, check 1 of the 5 ratings (very poor, poor, fair, good, very good):
• Fit with TODOS mission
• Overall quality of writing
• Usefulness to teachers
• Integration of equity and excellence
• Originality of this contribution to the education field/community

5. In #3, you gave overall feedback about the paper – now give more detailed feedback about the paper that will be useful for the author to consider in making a revision. It will be easiest if you give feedback in the order that the sections appear in the paper. Also, please be sure to note anything about the content (e.g., math content, references, etc.) that you noticed was incomplete, incorrect, misleading, offensive, or otherwise inappropriate.

6. Any further feedback for the editor to see (use an additional page if you need to):
Reviewing for *TEEM*: Why

general importance of reviews: see editorials in Nov. 2003 and Nov. 2009 issues of *Journal for Research in Mathematics Education*

- Reviews improve the papers by noting how or where the paper could be more specific, rigorous, consistent, practical, clear, inclusive, etc.
- Valuable service to *TEEM*, TODOS, & profession
- You get fame/credit (e.g., p. 30 of 2011 issue)
- Valuable experience and a way to keep up with new ideas (though you can’t yet cite/share them)
- You get insight into what *TEEM* reviewers/editors look for that gives you more confidence when you write your own article!
Writing for *TEEM*: Why

- You learn/improve by writing about your work
- Helps others learn best new ideas and make them accessible to future generations
- It can enhance your teaching portfolio (or tenure dossier) to have an article in *TEEM*, a refereed journal cited by other respected journals
- *TEEM* Editors can often give more hands-on help than most journals do
Writing for *TEEM*: Why

It can enhance your teaching portfolio (or tenure dossier) to have an article in *TEEM*, a refereed journal cited by other respected journals.
Writing for *TEEM*: How
(adapted and excerpted from TEEM call for papers)

To make sure every issue of *TEEM* offers something valuable not just to scholars but also to teachers, we have also launched a call for papers specifically written by and for a *classroom teacher and/or teacher educator*. The content could be one of the following:

• classroom-tested, TODOS/TEEM-oriented “excellence and equity” activity with a camera-ready worksheet for classroom use, similar to NCTM’s *Mathematics Teacher, Mathematics Teaching in the Middle School*, and *Teaching Children Mathematics*

• a description, discussion and reflection on what happened while trying to implement a particular strategy or recommendation from the "excellence and equity" research literature (from a previous issue of *TEEM*, or another publication or source)

• an article that focuses on some aspect of the TODOS mission and goals
Or you might consider an article involving....

scholarship of teaching and learning, action/classroom research, or discipline-based education research
Writing for TEEM: How

Identify question or intervention that’s important to you (and others)

• Reflection on puzzling/intriguing/inspiring class experiences

• 2 common types: “what works”, “what is”

• Area/theme → specific questions
How a question might get more researchable:

• Should we use technology in teaching?
• Does technology improve student learning?
• Do dynamic applets improve student learning of statistics?
• Do dynamic applets improve student understanding of measures of center, as measured by performance on class exam?
• Do dynamic applets improve college students’ understanding of measures of center, as measured by a concept inventory?
Choose a method that supports your RQ!

1.) Did group A perform better than group B on a test of content knowledge?
2.) What is a student thinking as she solves a problem involving X?
3.) Do student attitudes improve when using pedagogical technique Y?
4.) Why do students enjoy pedagogical technique Y?
5.) Does using technique Y improve student learning?
6.) How does using technique Y improve student learning?
7.) Do students participate more after experiencing pedagogical technique Y?

**QUANTITATIVE** methods: survey, experiment, quasi-experiment
**QUALITATIVE** methods: descriptive, case study, observation, interview, focus group
Why Search the Literature?

• Build on prior work
• Contextualize your question
• Don’t reinvent wheel, or study something already saturated with studies
• Ideas for variations
• Ideas for collaborators or related disciplines
How can you search literature?

- Identify keywords from your Research Question
- Use those keywords when you search:
  - http://scholar.google.com,
  - http://eric.ed.gov/?advanced,

as well as a library’s many databases such as Academic Search Complete, & Education Full Text, etc.
To see what you can draw from, cite, and add value to, search recent papers in Google Scholar ...

About 8,650 results (0.06 sec)

Bilingual classroom studies and community analysis: Some recent trends
LC Moll - Educational researcher, 1992 - edr.sagepub.com
... her classroom in an attempt to integrate home and school knowledge around an academic activity. ... ability to read and produce more sophisticated writing to accomplish those activities. ... She also understood that teaching through the community, as represented by the people in ...
Cited by 605 Related articles All 8 versions Cite Save More

12 Making inequality: Issues of language and meanings in mathematics teaching with Hispanic students
LL Khisty - New directions for equity in mathematics education, 1995 - books.google.com
... why" manzanas" is used in place of" five," nor of the cognitive relevance of this activity to the ... Most important, we should ask questions about our teacher-training policies and activities and how they affect ... Why is it not enough to assume that good teaching is simply good teaching ...
Cited by 207 Related articles Cite Save

A naturalistic look at language factors in mathematics teaching in bilingual classrooms
... Language is such an inherent part of human activity that it is easy to take it ... of this nature provides new insights and raises new questions regarding the teaching and learning ... First, what are bilingual teachers' knowledge and abilities in explaining mathematics in their student's ...
Cited by 26 Related articles All 2 versions Cite Save More

Culturally relevant mathematics teaching in a Mexican American context
E Gutstein, P Lipman, P Hernandez - Journal for Research in ..., 1997 - JSTOR
... He observed and participated in classes, helped teachers plan lessons, team taught, and worked with children ... Our data were drawn from our field notes of classroom observations and participation in classroom activities. ... 720 Culturally Relevant Mathematics Teaching ...
Cited by 252 Related articles All 9 versions Web of Science: 37 Cite Save More

Effective instruction for language minority students: The teacher
... 3. After eliciting a lesson, teachers encouraged students to take control of the discourse by inviting fellow students to participate in group and individual activities (eg, graphing ...
Cited by 86 Related articles Cite Save
...and in ERIC:

**Bridging the Gap: Fraction Understanding Is Central to Mathematics Achievement in Students from Three Different Continents**
Torbeys, Joke; Schneider, Michael; Xin, Ziqiang; Siegler, Robert S. – Grantee Submission, 2015

Numerical understanding and arithmetic skills are easier to acquire for whole numbers than fractions. The "integrated theory of numerical development" posits that, in addition to these differences, whole numbers and fractions also have important commonalities. In both, students need to learn how to interpret number symbols in terms of...

Descriptors: Mathematical Concepts, Comprehension, Arithmetic, Numeracy

**Unpacking Referent Units in Fraction Operations**
Philipp, Randolph A.; Hawthorne, Casey – Teaching Children Mathematics, 2015

Although fraction operations are procedurally straightforward, they are complex, because they require learners to conceptualize different units and view quantities in multiple ways. Prospective secondary school teachers sometimes provide an algebraic explanation for inverting and multiplying when dividing fractions. That authors of this article...

Descriptors: Mathematics Instruction, Teaching Methods, Mathematical Concepts, Secondary School Teachers

**Using Explicit C-R-A Instruction to Teach Fraction Word Problem Solving to Low-Performing Asian English Learners**
Kim, Sun A.; Wang, Peishi; Michaels, Craig A. – Reading & Writing Quarterly, 2015

This article investigates the effects of fraction word problem-solving instruction involving explicit teaching of the concrete-representational-abstract sequence with culturally relevant teaching examples for 3 low-performing Asian immigrant English learners who spoke a language other than English at home. We used a multiple probe design across...
Data Collection Considerations

- Operationalize variables ("learning", "enjoyment", "engagement", etc.)
- Any standardized/validated instruments (e.g., in Mental Measurements Yearbook with Tests in Print or PsycINFO)? if not, make & pilot one!
- Plan timeline of collection
- IRB approval may be needed (e.g., if you aim for disseminating generalizable knowledge) – your university or school district should have an office to provide guidance
- funding needed?
Writing for *TEEM*: How

- remember *TEEM*’s broad audience of math educators, practitioners, leaders, and administrators at all levels (not everyone is a scholar, teacher, activist, bilingual, etc.): give explanations and/or references for specialized terms
- Send a “query email” to *TEEM* ([teem@todos-math.org](mailto:teem@todos-math.org)) if you want feedback on the idea/topic/approach itself
- Browse past issues, author guidelines, and mission of *TEEM* to see if your idea for a paper is consistent with the style and scope of *TEEM*; it may fit another journal even better
TODOS mission:

“To advocate for equity and high quality mathematics education for all students – in particular, Latina/o students.”

(http://www.todos-math.org/mission-goals)
The intended audience of *TEEM* includes math educators, practitioners, leaders, and administrators at all levels. The journal aims especially to engage mathematics education topics involving **excellence and equity simultaneously** (rather than either in isolation) in a way that connects research to classroom practice and can directly inform the practice of teachers or professional developers.

To this end, articles are welcomed that relate to:

1. all students learning mathematics that is effective and appropriate for them, on and beyond grade level expectations, beyond computational abilities, as problem solvers,

2. a vision or example of what this looks like in the K-12 classroom (or courses for pre-service or in-service teachers), or

3. attention to the roles that language and culture (in a broad sense) have in teaching and learning.

The journal defines **equity** broadly, including (but not limited to) issues of language, gender, ethnicity, and culture. *TEEM* welcomes addressing issues of language, culture, access, equity, and quality from diverse viewpoints: teachers, teacher-leaders, administrators, professional developers, teacher preparation faculty, etc.
Writing for **TEEM**: parts of a paper

- Abstract (a 100-word summary)
- DARE (Discussion And Reflection Enhancement) Pre-Reading Questions, usually 2-4
- Bio (50 words per author)
- Acknowledgments (if any)
- BODY OF THE PAPER
- References (in APA style)
- DARE Post-Reading Questions, usually 4-8
- Appendices (if any)
TEEM’s Double-Blind Peer-Review Process

- Author emails submission to teem@todos-math.org
- Editor verifies submission is complete, blinded, and aligned with TODOS mission before assigning paper a manuscript number
- Editor sends paper (and email addresses of 3 suitable external referees) to an Editorial Panelist
- Panelist gathers and synthesizes referee reviews
- Editor finalizes decision and notifies Author
Writing for *TEEM*: submission process

- Proofread paper (spelling, grammar, jargon, clarity, flow, etc.)
- Remove identifying information from paper
  
  describe the setting or participants in a way that offers insight but does not reveal names of your school/city/participants;
  
  make sure the manner or frequency with which you cite your own work does not reveal your identity by taking into account how much your submitted article explicitly or exclusively depends on that prior reference.

  If you are still unsure how to handle a particular item with this issue, feel free to call it to our attention and we can suggest a solution before we send it out for review.

  clear the file’s “Author” field under Properties so that there is no “metadata” associated with the file that names an author or institution; make sure Track Changes has been fully accepted, with comments deleted, and with the tracking showing “Final” as you turn off Track Changes.

- Fill out “Author’s Disclosure Statement” (from *TEEM* webpage)
- Obtain written permission from the appropriate party if your paper includes items such as copyrighted images, large excerpts, or student work/photo which shows a student’s face or name.
- Send email to [teem@todos-math.org](mailto:teem@todos-math.org) whose body includes author bio, acknowledgments, title of paper, contact information of each author; attach to the email the “Author’s Disclosure Statement” and a .doc file with the (blinded) paper.
APA (American Psychological Association) style

WHY? Template to organize paper can avoid writer’s block, consistent and complete citations are considerate of reader, etc. Journals ensure this by requiring a particular style (how you say your content) and APA style happens to be the style most used in our field’s journals.

HOW? There’s a paperback (APA, 2010) of the 6th edition of APA style, but rules for common situations can be readily found online (e.g., http://www.apastyle.org or the Purdue OWL site) or inferred from TEEM papers. Some sites (e.g., http://citationmachine.net/) put your citations in the right form.
Writing for TEEM: revision process

• It’s the most common result, so don’t take it personally! It’s just an opportunity to help your paper reach its full potential.

• As you prepare the revision, feel free to ask the Editor for clarification if you feel part of the feedback is unclear or contradictory.

• When you submit the revision, you need to attach a separate file that makes clear how and where reviewer feedback has been addressed. Depending on the number/extent of the changes, this could be done by including
  ❑ a Track Changes version of the paper with changes indicated, OR
  ❑ a 2-column table with each reviewer suggestion on the left and the corresponding change (or justification of why it was not changed) in the right column of that row.
<table>
<thead>
<tr>
<th>Reviewer #1 Comment</th>
<th>Author Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is not a Mixed Methods Design research study. First, it appears the quant and qual components came from two different populations. The quant component was from a large urban research university or large community college system in a large Southwestern urban area. The qual component was exclusively from a large research university in the Southwest region, which appears to be completely different. Populations from the quant component should have had equal opportunity to participate in the qual component. And in a sequential MMD study, the supplemental component intentionally follows the core component. Therefore, the statement the components were conducted independently with a delay between the two phases indicates again a lack of understanding for MMD. It is also stated &quot;the triangulation of qualitative and quantitative data,&quot; but it was not clearly explained how the triangulation was conducted. The impression is this is a quantitative study with qualitative conducted as an afterthought. There is little connection between the two components.</td>
<td>Data came from the same university. Additional data from the quantitative part came from a community college in the same region. Since this was sequential, the qualitative component took place later and they were no longer eligible to participate. Speak about triangulation of data and researcher.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Reviewer #2 Comment</th>
<th>Author Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am curious: Why didn’t the authors collect data by a class test, for example, as part of a midterm so that more sincere responses were possible from the participants? Any reason?</td>
<td>Thank you and good question! We were not able to coordinate due to the fact that they were located at various campuses with the various faculty teaching these classes to have these questions embedded in a midterm. Would have been nice!</td>
</tr>
<tr>
<td>Page 5 line 8: Typo in the citation year for Johnson and Omwueghuzie (2005)? It’s correct in the reference list.</td>
<td>Thanks and done.</td>
</tr>
<tr>
<td>Page 6 line 38: Could you provide more details on this?</td>
<td>Yes, we added the following: “A principal</td>
</tr>
</tbody>
</table>


**Post-submission communication with Editor**

- Editor generally communicates with corresponding author who submitted paper
- If you don’t get confirmation of receipt in a week or a decision within 2-3 months, it’s okay to check in
- After layout of accepted paper, Editor sends you a galley to proofread (in a timely manner) for errors
- When issue is published at TODOS website, you typically get sent a pdf of paper, a congratulatory letter, and (later) a free print copy of the issue from the limited print run usually done
Framing Equity: Helping Students “Play the Game” and “Change the Game”

Rochelle Gutiérrez

Abstract
This article introduces a framework for equity that entails the dimensions of Access, Achievement, Identity, and Power. Beyond knowledge and skills, teachers need an “equity stance” that embraces and works to balance the tensions between these four dimensions.

Discussion And Reflection Enhancement (DARE) Pre-Reading questions:
1. How do people in your working context define equity and what words do they use to discuss it?
2. How do you define equity and how do you know you are addressing it in your everyday practice?

“DARE” Post-Reading questions appear at the end of the article. This article (without DARE questions) originally appeared in Spring 2008 Noticias de TODOS.

Rochelle Gutiérrez (rg1@illinois.edu) is an Associate Professor at the University of Illinois at Urbana-Champaign, and her research focuses on equity in mathematics education, race/class/language issues in teaching and learning, effective teacher communities, and social justice.
Okay, let’s dive in!

In small groups (1 per TEEM person) or as whole group, share ideas/outline for a paper & get live feedback!

And after today, contact the terrific TEEM team at: teem@todos-math.org