

Mar 6th, 11:15 AM - 11:35 AM

Using Mathematics Literature with Prospective Secondary Mathematics Teachers

Christopher Charlie Jett
c_jett@yahoo.com

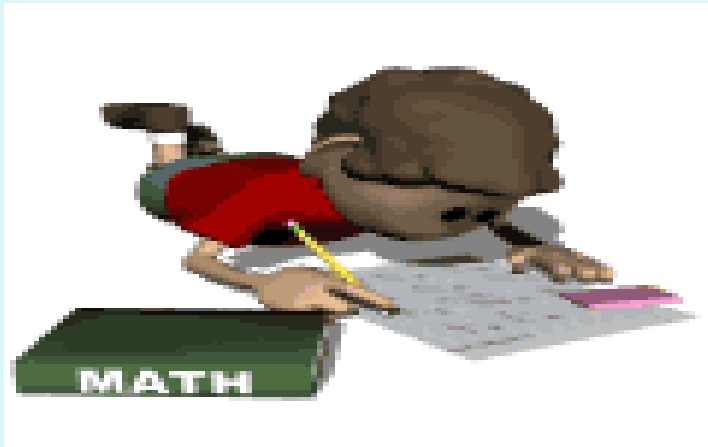
Follow this and additional works at: <https://digitalcommons.georgiasouthern.edu/stem>

Recommended Citation

Jett, Christopher Charlie, "Using Mathematics Literature with Prospective Secondary Mathematics Teachers" (2015). *Interdisciplinary STEM Teaching & Learning Conference*. 24.
<https://digitalcommons.georgiasouthern.edu/stem/2015/2015/24>

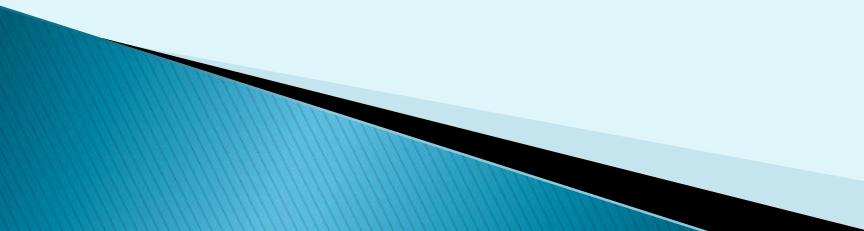
This event is brought to you for free and open access by the Conferences & Events at Digital Commons@Georgia Southern. It has been accepted for inclusion in Interdisciplinary STEM Teaching & Learning Conference by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact digitalcommons@georgiasouthern.edu.

Using Mathematics Literature with Prospective Secondary Mathematics Teachers



Presenter: Dr. Christopher Jett
4th Annual GA Scholarship of STEM
Teaching and Learning Conference
Friday, March 6, 2015

Introduction

- ▶ Have the breadth and depth of mathematics knowledge to effectively teach students (MAA, 2001)
 - ▶ Incorporate literature in mathematics (NCTM, 2000)
 - ▶ Build on the work in this domain with prospective elementary teachers
- 

Research Question

How might the incorporation of literature through literature circles influence prospective secondary mathematics teachers' pedagogical paradigms?

Literature

- ▶ Hillman (2000): devise lessons with strong, weak, or no link
- ▶ Wilburne & Napoli (2008): teach mathematics through a novel
- ▶ Warde (2005): connect math to other disciplines

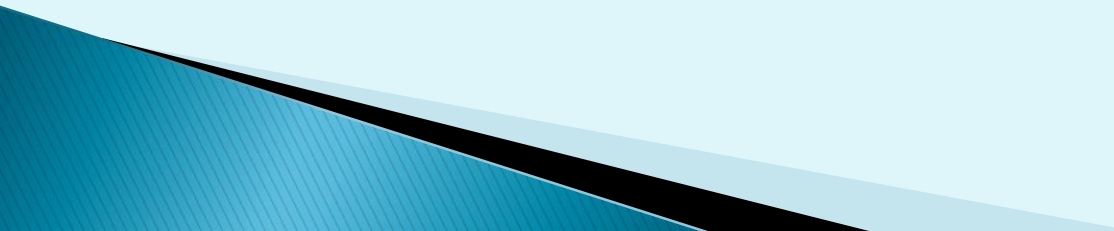
Build on existing literature.

My Work

- ▶ Analyzed preservice teachers' work through these categories
- ▶ Used some novels to introduce the idea of teaching math through literature
- ▶ Equipped them with resources & strategies to connect math to other disciplines

Advance the field of mathematics education research.

Intervention

- ▶ Engage students in the mathematics teaching and learning dynamic
 - ▶ Place students in literature circle teams
 - ▶ Infuse concepts from literature in problem sets, math tasks, and other activities
 - ▶ Pose problems for mathematical exploration
 - ▶ Improve their accuracy and precision of mathematical vocabulary
- 

Literature in Mathematics!!!

- ▶ Connects math to other disciplines
- ▶ Develops students' math vocabulary
- ▶ Expands students' vocabulary
- ▶ Assists with reading comprehension
- ▶ Increases students' reading rates
- ▶ Cuts across the multiple intelligences
- ▶ Spans learning styles
- ▶ Appeals to ELLs
- ▶ Relates to students' lives and experiences
- ▶ Promotes cultural inclusiveness
- ▶ Makes mathematics learning fun

MATH

LITERACY

The Study

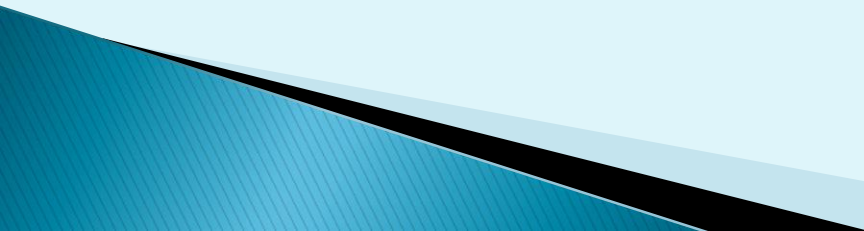
Race	Gender	Number of Prospective Teachers
African American	Female	2
Chinese	Female	1
White	Female	5
White	Male	3

Theme 1: Benefits

“Before this class I had never considered bringing in literature outside of a textbook. Even if I had tried to bring in other pieces of literature, I would not have known where to look for relevant materials.”
(Steve)

Theme 1: Benefits

“Before the projects we presented in class I wasn’t exactly sure how to bring literature into the classroom besides using textbook applications... There are books that tell a fun history of math, fictional books that tell stories through the use of numbers, and even subject guidebooks with fun stories and riddles to help students retain what they read. We need these materials in the classroom because not everyone loves math, and it’s easy to forget that when you’re a future mathematics educator taking mostly math classes with math lovers.” (Samantha)



Theme 2: Little to No Benefits

“In general I still feel unprepared to incorporate literature into my classroom. Out of the options of books for the literature presentations, I am glad that I got *The Man who Counted*. I would use this book to build a basis for problem of the week in my classroom...The incorporation of these books did not help me get a better understanding of math ideas nor did it help me learn how to incorporate literature into the classroom.”

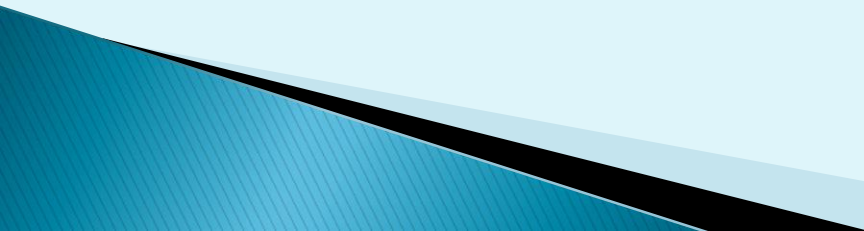
(Mary)

Theme 2: Little to No Benefits

“While the midterm literature presentations were interesting in that they introduced me to several books I may never have heard of otherwise, the presentations did not help me to see how I could incorporate the books in my future classroom in a meaningful way.”

(Beth)

Critical Questions

- ▶ How might literature inform the reform goals for mathematics education/STEM education?
 - ▶ How might we use literature to effectively address the Common Core State Standards?
 - ▶ What types of curricula, pedagogical approaches, and theoretical orientations are effective in helping prospective secondary school teachers gain STEM content, conceptual and pedagogical knowledge?
- 

Thank you for attending!!!
Please share any thoughts,
questions, or suggestions.

**Incorporate literature so that
students can read, write, and
reason with mathematics!!!**

