From Professional Development And Into the Classroom

Juan M. Gerardo & Heather Winters
Agenda

- Welcome & Agenda
- Quiz-Quiz Trade
- The Good, Bad, & the Nitty-Gritty of PD
- Lesson Part I and II
  - Additive Situations (CI 430)
  - Additive Situations (Kindergarten Classroom)
- Debriefing / Conversations About Lessons
- Keeping Equity in Mind
- General Q & A
- Wisdom from the field & Lessons learned
- Session Feedback
Quiz-Quiz Trade

- Meet at least 5 people (that you don’t know)
  - Anyone willing to share something they learned from a colleague?
The Good, Bad, & the Nitty-Gritty of Professional Development

- Quick Write (2 minutes)
  - Describe your experience with professional development (district-wide, school-wide, conference, etc.)
    - These can be positive, negative, neutral experiences
- When time is up, you will share with those around you. (3 minutes)
Simulated CI 430 Lesson
“Additive Situations”
Part I: Additive Situations (CI 430)

- Juan’s Professional Story
  - Undocumented for most of my K-12 schooling
  - Middle school teacher in Los Angeles, CA
  - Graduate School
    - Equity in Mathematics Education
      - Teacher-Student Relationships may help to engage Black and Latin@ student to engage with mathematics
Part I: Additive Situations (CI 430)

- Please write a subtraction or addition word problem
Part I: Additive Situations (CI 430)

- Compare and contrast with these story problems
  - Examples from CI 430
    - Ken has 5 Hot Wheels. Bob gave him some more. Now Ken has 12 Hot Wheels. How many Hot Wheels did Bob give him?
    - Lucy picked blueberries with her mom. Lucy gave two to her younger brother, leaving her with 6 blueberries. How many blueberries did she pick?
Part I: Additive Situations (CI 430)

- Compare and contrast with these story problems
  - Examples from CI 430
    - Ken has 5 Hot Wheels. Bob gave him some more. Now Ken has 12 Hot Wheels. How many Hot Wheels did Bob give him?
      - *Semantic Equation*
        - $5 + [ ] = 12$
    - Lucy picked blueberries with her mom. Lucy gave two to her younger brother, leaving her with 6 blueberries. How many blueberries did she pick?
      - *Semantic Equation*
        - $[ ] - 2 = 6$
Part I: Additive Situations (CI 430)

- Conceptual understanding of the equal sign

<table>
<thead>
<tr>
<th>Given</th>
<th>Kids Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5 + 3 = 8$</td>
<td>Makes sense</td>
</tr>
<tr>
<td>$7 = 4 + 3$</td>
<td>No!</td>
</tr>
<tr>
<td>$6 = 6$</td>
<td>No way!</td>
</tr>
<tr>
<td>$4 + 3 = 6 + 1$</td>
<td>Nope</td>
</tr>
</tbody>
</table>

- “=” is thought of “the answer is” or “makes” or “produces”
- Should be thought of as “the same as”
Heather Winters’ Kindergarten “Additive Situations”
Part II: Additive Situations
(Kindergarten Classroom)

- Heather’s Professional Story:
  - Eighteen years teaching in kindergarten in the same school
  - Academics through the Arts
  - Informed by professional development
    - Multiple Intelligences
    - Thematic learning/Interdisciplinary learning
Part II: Heather’s Goals
(Kindergarten Classroom)

● Personal goal
  ○ Stop saying, “I’m not a math person.”
  ○ Facilitate students’ math thinking

● Mathematical Goals
  ○ To attend more closely to the various ways children solve problems
  ○ To focus on making math connections to the real world

● Pedagogical Goals
  ○ Showcasing student learning
  ○ Documenting the math process
Part II: Heather’s Classroom
(Kindergarten)
Heather’s Classroom
(Kindergarten)
Kindergarten Story Problems

- Matthew’s Math Story
- Iman’s Math story
- Isabella’s Math Story
Debriefing / Conversation

- Comments or Reactions
  - About the simulated CI 430 lesson
  - Heather’s classroom?
  - How these connect?
- Do you have questions for us?
  - Our teaching approaches? Our Philosophies?
  - other?
Heather’s Goals for the Mathematics Lesson

- Additive Situation- Math Story Problems
  - Open ended activity which evolves in complexity over the year
  - Context problems relevant to students
  - Developmentally appropriate
  - Interdisciplinary- Math, Oral Language, Literacy, Science
- Multiple Intelligences-intrapersonal, interpersonal, visual/spatial, verbal/linguistic, and mathematical/logical
- Beneficial to ELLs
Some Challenges of Professional Development

● Lack of Support for Implementation
● Curricula doesn’t seem to be relevant
● Lack of school/classroom community
● Too much to teach...what do I teach first?
● Balancing district vs. personal professional development
Story Problem Mathematics
(CCSS connection)

● Mathematical Concepts
  ○ Cardinality & Subitizing
  ○ Skip counting (emergent multiplication)
  ○ Subtraction
  ○ Equivalence

● Common Core Connection
  ○ Counting & Cardinality
    ■ K.CC 1-3: Know the number names and the count sequence
    ■ K.CC 4-5: Count to tell the number of objects
  ○ Operations and Algebraic Thinking
    ■ K.OA 1-3: Addition & Subtraction
Dimensions of Equity

ACCESS
- RESOURCES
- QUALITY TEACHERS
- RIGOROUS CURRICULUM

IDENTITY
- BALANCE BETWEEN SELF AND OTHERS IN A GLOBAL SOCIETY
- ACKNOWLEDGING HOW RACIALIZED, GENDERED, ETC. IS MATHEMATICS CLASSROOMS
- LEVERAGE LINGUISTIC AND CULTURAL RESOURCES

POWER
- SOCIAL TRANSFORMATION:
- STUDENT VOICE
- MATHEMATICS AS TOOL TO CRITIQUE SOCIETY
- RETHINKING MATHEMATICS AS A MORE HUMANISTIC ENTERPRISE

ACHIEVEMENT
- PARTICIPATION IN CLASS COURSE TAKING PATTERNS
- GRADES & STANDARDIZED TEST SCORE RESULTS
- PARTICIPATION IN THE MATH PIPELINE (STEM)

(GUTIÉRREZ, 2009)

(MARTIN, 2009; WALKERDINE, 1988; AKREU & CLINE 2009; CIVIL, 2006)
General Q & A

- Recall your quick-write about professional development:
  - What advice do you have?
  - What experiences do you have that you’d like to share?
  - What general questions do you have for us?
Wisdom From the Field
(Heather Winters)

- Make a personal goal each year.
- Be reflective.
- Collaborate, collaborate, collaborate!
  ○ Ask for help. No one is perfect.
- Don’t feel overwhelmed. Take baby steps for change.
- You are evolving and a learner for life.
- Trust your experience.
Lessons Learned
(Juan Manuel)

● Professional Organizations
  ○ Learn with others

● What’s your intellectual/academic passion?
  Share that with your students
  ● (and have them develop theirs)

● Do what’s right for students
Contact Information

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● Juan M. Gerardo
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¡Please fill out the Session’s feedback form, thank you!
Resources

● Professional Development
  ○ Research References
    ■ Linda Darling-Hammond; Pamela Grossman; Sharon Feimen-Nemser;
  ○ Professional Organizations
  ○ Math: National Council of Teachers of Mathematics
    ○ http://www.nctm.org
  ○ Literacy: National Council of Teachers of English
    ○ http://www.ncte.org
  ○ Science: National Science Teachers Association
    ○ https://www.nsta.org
  ○ Social Science: National Council for History Education
    ○ https://www.nche.net
  ○ General:
    ■ Kappa Delta Pi
      ■ https://www.kdp.org
    ■ Phi Kappa Delta International
      ■ http://pdkintl.org
Resources

- **Multiple Intelligences (Gardner)**

- An [interdisciplinary approach](https://serc.carleton.edu/econ/interdisciplinary/why.html) for teaching

- **30 Questions for Teacher Reflection**

- **More Teacher Reflection**
  - [http://www.idra.org>IDRA_Newsletter/November_-_December_2012_Actionable_Knowledge/Professional_Development_in_the_21st_Century/](http://www.idra.org>IDRA_Newsletter/November_-_December_2012_Actionable_Knowledge/Professional_Development_in_the_21st_Century/)