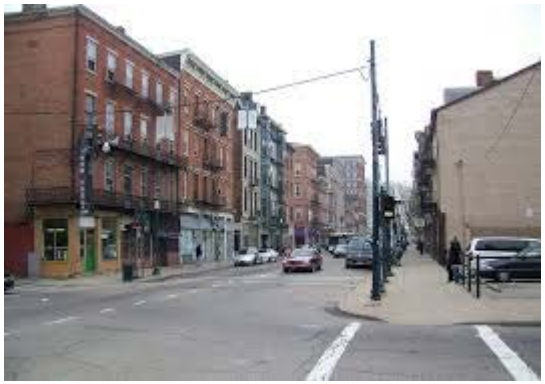

A Narrative Inquiry into the Making of an Urban Science Teacher: Felicia's Story

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Problem

- Teaching science in high-poverty urban settings requires teachers to examine personal, emotional, and disciplinary elements, including:
  - elements of identity, diversity, and social justice (e.g. Rivera Maulucci, 2013);
  - and instructional strategies to support a diversity of student learning needs (NRC, 2010) and student engagement in the science practices (NRC, 2012).
- How a teacher education program can develop science educators who possess the knowledge, skills, and mindsets necessary to be effective in urban schools?

Methods: Critical Event Narrative Inquiry

- Critical event narrative inquiry into the experiences of one beginning urban science teacher (Felicia)
- Narrative inquiry uses stories as evidence of self-understanding (Clandinin & Connelly, 1999).
- Critical event narrative inquiry focuses explicitly on stories documenting significant events that illustrate a professional turning point that reveal reaching new understandings of oneself, others, and/or the school (Webster & Mertova, 2007).

Methods: Research Context

- Research conducted within the Urban Science Teacher Preparation Program (USTP), a Robert F. Noyce Foundation Grantee to recruit and prepare math and science educators for high need schools.
- MEd leading to certification for committing to teach in an urban high-need school for at least two years.
- Longitudinal study of graduates (3 years)
- Felicia was chosen for this in-depth analysis for her singularity (Patton, 1990) among USTP graduates on her identity, aspects of social justice, and her school context, thereby highlighting theoretical insights that may otherwise be overlooked (Yin, 2013).

Methods: Data Sources

- Oral and written autobiographical accounts:
  - Semi-structured individual interviews (7)
  - Written reflections of exemplar lessons (4)
- Secondary sources (triangulating findings):
  - 8 lesson plans
  - Interview with USTP program director
  - Interview with colleague

Methods: Analytic Approach

1. Identified critical events for analysis (Webster & Mertova, 2007)
2. Engaged in multiple stages of deductive and inductive coding (Boyatzis, 1998).
   - Deductive – based upon codes for narrative inquiry (Clandinin & Connelly, 1999)

Codes	Description
Interaction	The data were analyzed for interactions or relationships with others that influenced Felicia's beliefs and/or instruction.
Continuity	The data were analyzed to identify time-based dimensions (past, present, future) that influenced Felicia's beliefs and/or instruction.
Situation	The data were analyzed for school specific norms, policies, and procedures that influenced Felicia's beliefs and/or instruction.

Methods: Analytic Approach

- Inductive – “overreading” (Ayres, Kavanaugh, & Knafl, 2003) data sources chronologically to identify repetition, inconsistencies, and omissions in the overall narrative.

3. Thematic analysis: I created a matrix, or an “intersection of two lists” (Miles et al, 2014, p. 109) based upon the three narrative elements (situation, interaction, continuity) (Clandinin & Connelly, 2000) to clarify turning points, identify patterns and connections, or “narrative threads” (Rivera Maulucci, 2013, p. 460) across time.

Findings: Overview

Theme	Narrative Elements
Low value of science	Interaction and Situation
Teaching is telling	Situation and Continuity
Low expectations	Interaction

Findings: Teaching is Telling

No hands-on resources (situation)

- The science curriculum did not include any hands-on activities, and these materials were not provided by her school.
- "[e]very time I do [hands-on activities] it tends to be me trying to source materials or trying to be creative or think of things I can just get from the supermarket."

Findings: Teaching is Telling

Teacher as content authority (situation)

- Every lesson must begin with the teacher providing a lecture introducing new content, followed by an activity that allows students to apply what they have learned.
- For Felicia, this *"feels like answering the question for them," rather than engaging students in figuring out the science on their own."*
- Also, students were not comfortable engaging in discussions with each other for learning; *"most of my job is to maintain silence among the students... So I almost get the sense like those students don't really know how to work efficiently while talking to someone."*

Findings: Teaching is Telling

Teacher as disciplinary authority (continuity)

- When Felicia attempted to implement practice-based science instruction, she encountered numerous behavioral challenges. Other teachers commented that her approach to teaching was wrong for these students. She commented, this *"made me feel like I was at a deficit. Like, I wasn't doing something right. Like, I needed to fix something about my personality."*

- However, rather than changing her approach. The lens of *continuity* illustrates how she reflected upon her upbringing in Jamaica that she brought to her priorities as a teacher; *"I kind of took a step back because I was like "OK well, is this me? Is this how I want to be? Is this the type of discipline that I intend to use?" and I just started soul searching..."*

Conclusion

- Felicia experienced the hidden curriculum in “instructional norms and values not openly acknowledged by teachers or school officials” (Vang, 2006, p. 20).
- Findings reveal the importance of narrative, particularly narratives of critical events, to engage teachers in sensemaking and professional growth. Specifically how novice science teachers:
  1. continue to learn how to teach beyond university preparation by noticing, interpreting, and challenging standard school practice (Luehmann, 2007).
  2. Resist school socialization pressures that perpetuate inequities(Jay, 2003).

Implications

- Pre-service teachers need opportunity to reflect not only upon their developing pedagogical practice, but also learn to effectively analyze school policies and procedures that may perpetuate inequities
- In-service teachers must be provided with opportunities to engage in sustained collaborative reflection with their peers to critically examine their developing practice within and across urban school contexts.

Thank You!

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