

WHEN SOCIOLOGY AND MATHEMATICS MEET TEACHER EDUCATION

Proposing a Bourdieu-Informed Discourse Analysis (BIDA) for
Self-Study in Mathematics Teacher Education

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Presentation Outline

Abstract:

The research discussed in this presentation is a self-study of my practice as a faculty supervisor for secondary mathematics student teachers during their four-month school field placement. In studying my practice, I draw on a blend of self-study methodology, the conceptual tools of Bourdieu's sociological theory, and a mathematics graph theory network analogy to unpack the structures of the field and my role within that field. In other words, the presentation shares what happens when sociology and mathematics meet teacher education!

- Context and focus for my research in mathematics teacher education
- Methodological shift from 'other' to 'self'
- Draw to Bourdieu's social field theory and self-study methodology, with influences from CDA and Graph Theory
- Introducing the BIDA framework
- Return to context and focus for my research in mathematics teacher education

Reconceptualizing secondary mathematics teacher education

- Three dimensions/perspectives to SSHRC research program: PROspective; RETROspective; INTROspective
- **PROspective...** a focus on exploring new models for internship and faculty supervision
- Context: Faculty of Education at University of Regina
 - Teacher education: 4 year direct entry from secondary school; also, post-degree program (2 years)
 - Several short-term practicum/field experiences throughout teacher education program; final year, a 4-month field experience (internship) in schools

Tracing the evolution...

- The context of teaching & learning mathematics in high school classrooms and mathematics teacher education
- Research intent on disrupting traditional practices in teaching mathematics and teacher ‘training’ / education
 - ▣ Disruption #1: pst shift to inquiry-based approaches
 - ▣ Disruption #2: the role of practicum (field experience) for pst
- Methodological focus: critical exploration of (and focus on changing) the practices of ‘other’
- Draw to Bourdieu’s social field theory, particularly the concepts of habitus, field, cultural capital

Bourdieu's Social Field Theory...

a few key ideas

- Field and habitus are central to understanding this social network of relations since the two concepts are produced and reproduced in relation to each other through social practice.
- BSFT: a person's habitus, or set of dispositions, in a social practice field (that is, a socially instituted and structured domain or space) are tightly bound up in and by the network of practices and discourses (relations) within that field.
- BSFT can highlight the network of relations and discursive practices that support (and (re)produce) traditional practices in schools and, hence, in field experience
- Nolan (2012). Dispositions in the Field: Viewing mathematics teacher education through the lens of Bourdieu's social field theory. *Educational Studies in Mathematics*, 80(1/2), 201-215.
 - Understanding the discourses positioning and regulating prospective teachers in the field, casting a reflexive look at the role of mathematics teacher education programs

- Closed Nolan (2012) by reflecting on how practices are (re)produced in schools... but also how my own practice as a teacher educator and field experience supervisor must be (cross)examined as its own site of reproduction
- Draw to Mason's (2002) words: "I cannot change others; I can work at changing myself." (p. v)
- Research shift...
 - ▣ (new) Disruption #1: study of *my own shift* to inquiry-based approaches in my teaching as a teacher educator
 - ▣ (new) Disruption #2: study of *my role* as a university supervisor (faculty advisor) working with prospective mathematics teachers in their field experience

Present day...

- (A focus on disruption #2) Studying my role as a supervisor in prospective teachers' field experience
- Question: how is the network of relations in the (field of) field experience shaping me as a supervisor and as a mathematics teacher educator?
- In other words, exploring my own habitus (and habitus-field fits) as teacher educator, supervisor, researcher
- Conceptualizing a theory-methodology 'conversation' between Bourdieu's social field theory and self-study methodology

The meeting of sociology, mathematics, and teacher education research:

Drawing on...

- Self-study methodology
- Bourdieu's Social Field Theory
- Graph Theory
- Critical Discourse Analysis
- Bourdieuan methodological approach

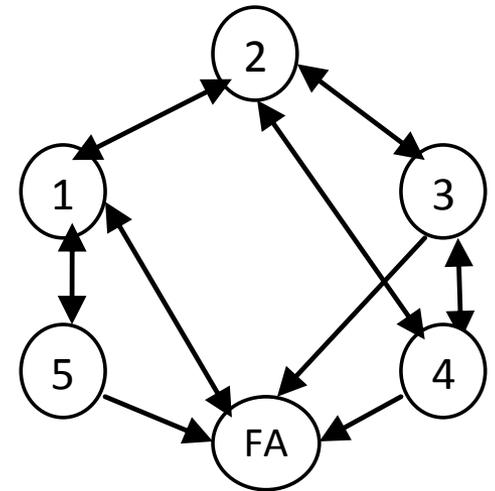
For example...

- Inquiry into, and interrogation of, own practices
- Habitus, field, network of relations
- Vertices, edges, relations/connections
- Approach to revealing contradictions within and between discourses
- 3 guiding principles to socio-analysis (Grenfell, 2008; Rawolle & Lingard, 2013)

Network of Relations... Five Data Storylines

(Node & Link(s))

- *Storyline #1*: NOT sitting in the back of the classroom
- *Storyline #2*: Metaphorically Speaking
- *Storyline #3*: “I appreciate the opportunity but...”
- *Storyline #4*: Placement protocol
- *Storyline #5*: “If the process becomes disruptive...”



For further discussion of these storylines, see:

Nolan, K. (2015). Beyond tokenism in the field? On the learning of a Mathematics teacher educator and faculty supervisor. *Cogent Education*, 2: 1065580.
<http://dx.doi.org/10.1080/2331186X.2015.1065580>

Bourdieu-informed discourse analysis (BIDA) framework

- Pre-phase: name the pre-constructed object of study
- Three-Phase: study field of relations (analysis of data) through 3 different lenses:
 - a. The lens of the research object habitus and field
 - b. The lens of the role of Others in the network
 - c. The lens of reflexivity
- **Note**: In self-study, the pre-constructed object is named as *self* in pre-phase. But which *self*?

Nolan, K. (*in press*). Stimulating conversations between theory and methodology in mathematics teacher education research: Inviting Bourdieu into self-study research. In M. Murphy & C. Costa (Eds.), *Theory as method in research: On Bourdieu, social theory and education* (pp. 171-190). UK: Routledge.

Applying BIDA Three-Phase for *self* as field experience supervisor

- a. **The lens of the research object habitus and field...**

what a supervisor *is* and *does* – internship manual and past intern stories construct my habitus as ‘peripheral’
- b. **The lens of the role of Others in the network...**

those who carry weight in the social practice field: interns, teachers, university admin
- c. **The lens of reflexivity...**

‘exposing’ network of relations, but also my own compliance (as supervisor) and researcher positioning

Closing Thoughts and Questions

- I use BIDA to disrupt the pathways that sustain the network of relations in teacher education field experience, working to reveal their arbitrary and contingent nature.
- The BIDA framework weaves methodology and theory to create a formal approach to unpacking self-study research data— for teacher education to study itself and unpack learning by inviting sociology and mathematics into the conversation.
- BIDA theory-methodology tool can be used in contexts beyond self-study research (and beyond teacher education research).

Q: What is new in the BIDA framework?

Q: Is this “awkward amalgamation” (Nolan, *in press*) valuable for mathematics teacher education? teacher education? education?

Q: What suggestions/critiques do you have to offer?