

INNOVATIONS IN/FOR THE FIELD

Reconceptualizing secondary mathematics teacher education

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Abstract



- ◆ Reconceptualizing mathematics teacher education means rethinking the dominant conceptual framework for questions of how, why, and what could be in teacher education.
- ◆ This paper describes a research study to explore a multi-dimensional model for field experience (internship) that strengthens theory-practice transitions in secondary mathematics teacher education.
- ◆ In attempting to establish an e-advisor mentorship model, traditional notions of teacher education programs as places to ‘train’ and ‘prepare’ teachers are disrupted.
- ◆ This research study traces the intersections of identity, agency and reflexivity in mathematics teacher education drawing on concepts of Bourdieu’s social field theory.



Context and Purpose of Research Study

- ◆ Context: Faculty of Education at the University of Regina, faculty members assigned to the supervision of several student teachers (interns) during their four-month practicum experience (internship) in various schools in the southern part of Saskatchewan (a province in Canada)
- ◆ Research Purpose 1: to create and sustain a (new) model of professional development for a faculty advisor and her secondary mathematics interns during their internship experience in schools
- ◆ Research Purpose 2: to disrupt traditional notions of
 - Teacher education as ‘training’ and ‘preparatory’ work
 - The role of faculty ‘super-vision’ in field experiences



An experimental digitally-enhanced model for internship (field) experience

- ◆ This model included: the integration of a co-mentorship learning community model, a lesson study approach to professional development, and a digital ‘e-advisor’ component to intern supervision.
- ◆ The experimental internship model required three (3) case study prospective and cooperating teachers to keep a self-study logbook, to engage in lesson study experiences, to video-tape mathematics lessons, to participate in an online learning community and to meet 4 times (one day each) during the 4-month internship semester for interviews and reflective focus groups, as well as professional development activities.
- ◆ In this presentation, results of the first three years of this case study will be discussed



Research Study



- ◆ **Literature Review:** teacher-directed approaches prevail in secondary math classrooms; prospective teachers' prior knowledge of what teaching & learning look like; disconnect between university and school theories/practices; blame on prospective teachers for not changing quickly enough
- ◆ **Research Question:** What can a teacher educator and faculty advisor learn from prospective secondary mathematics teachers as they construct (and are constructed by) official discourses for pedagogical change embedded in mathematics classrooms?
- ◆ **Methods/Data:** interview and video data over three years from 8 interns; to understand how interns story themselves in their own processes of learning to teach (*through inquiry*) and negotiating spaces in field experience
- ◆ **Analysis:** used transcripts to tease out a number of 'becoming teacher' discourses; attempt to understand inner workings of these discourses/dispositions (why/how pst take them up or not); how this knowledge may better position teacher educators to address habitus/field mismatches

A Closer Look at Research Purpose 1...

- ◆ To create and sustain a (new) model of professional development for a faculty advisor and her secondary mathematics interns during their internship experience in schools
- ◆ Traditional professional development process (PDP): faculty advisor visits school to pre-conference, observe, post-conference (with intern)
- ◆ Faculty advisor expected to conduct PDP just 3-5 times during internship semester
- ◆ This 'limited contact' approach: not conducive to a valuable mentorship relationship between student and teacher educator; leaves most of intern professional development in hands of cooperating teacher; limited opportunity to bridge theory-practice connections

A Closer Look at Research Purpose 2...

- ◆ to disrupt traditional notions of
 - Teacher education as 'training' and 'preparatory' work
 - The role of faculty 'supervision' in field experiences
- ◆ Traditional PDP reinforces TE as preparatory work: student leaves the theory behind, breaking preparatory ties and plunging into real classroom practice
 - Field of TE: expectation of practical ideas for immediate use
 - Field of school (internship): negotiations of conflicting habitus-field fits
- ◆ Traditional PDP places cooperating teacher as 'process mentor' and faculty advisor as 'product supervisor'
 - Regulative discourses and practices of surveillance

So, what did my self-study study?

- ◆ Several stories of how I adapted/modified the traditional faculty advisor role and the PDP
- ◆ Briefly, in terms of the purpose(s):
 - **Limited contact approach** addressed by increasing contact: ‘real’ visits supplemented by ‘virtual’ visits using
 - a course management system for e-mail, chat, discussion boards (Moodle);
 - synchronous video conferencing tools (Skype, Adobe Connect)
 - non-synchronous video reflective tools (Flip video camera)



what did my self-study study? (cont'd)

- ◆ The role of **preparatory work** (and the university-school separation) was challenged by creating a virtual community of practice (Adobe Connect; Skype)
- ◆ The role of **supervision** was disrupted by
 - Extending the PDP process to several days, not the limited 2-3 hour timeframe for pre-con, observe, post-conf
 - Interns selecting 'snippets' of their lessons for filming and viewing



Discussion of data and analysis

- ◆ Year 1 mostly focused on purpose 1 (the blended approach to creating a continuum for PD)
- ◆ Years 2 & 3 focused on purpose 2 (disrupting traditional notions of role of faculty advisor and teacher education programs)
 - Disrupt perceptions of ‘super’-vision (classroom observations) (tool: flip video cameras)
 - Understand interns’ perceptions of my role (tool: Adobe connect for video conference)

Implications of Study

- ◆ Recall: study's intent to listen to prospective teachers' stories in transforming my practice as teacher educator and faculty advisor
- ◆ Brief reflections in two areas:
 1. The passive act of *wanting* to change one's habitus is easier said than done when the rules of the school playing field continue to appear unaltered in any significant manner; carry the voices of prospective teachers back to the field of teacher education and curriculum classes
 2. Impact on my own practice as *teacher educator* (curriculum courses integrate reflexive approach to field experience before and after field experience) and *faculty advisor* (disrupting traditional roles and practices of faculty advisor in schools; e-advisor project)

General Introduction to Bourdieu's Social Field Theory

- ◆ **Concepts:** field, habitus, capital, doxa, misrecognition, symbolic violence
- ◆ The everyday decisions made in a social context (**the field**) shape, and are shaped by, a set of dispositions or tendencies (**habitus**) that are formed through the embodiment of an individual's (or the collective's) life history.
- ◆ In a network of relations, field and habitus are inseparable, mutually constituting, and complicit in each other in all social contexts.
- ◆ Bourdieu describes two main forms of **capital** (economic and symbolic)... cultural capital (a form of symbolic capital) is most relevant.

- ◆ **Cultural capital** is basically a synonym for status (or position) and refers to the resources that one brings to (and/or has access to in) the field.
- ◆ **Doxa** is the set of core values and discourses of a social practice field that have come to be viewed as natural, normal, and inherently necessary
- ◆ Such an uncritical acceptance of what constitutes normal, natural and necessary is what Bourdieu refers to as **misrecognition**
- ◆ Misrecognition creates conditions for **symbolic violence**: the act of imposing meanings and “impos[ing] them as legitimate by concealing the power relations which are the basis of its force”