Beyond tokenism in the field? On the learning of a Mathematics teacher educator and faculty supervisor

1 author:

Kathleen Nolan
University of Regina
37 PUBLICATIONS **184** CITATIONS

*Corresponding author: Kathleen Nolan, Faculty of Education, University of Regina, 3737 Wascana Parkway, Regina, Saskatchewan, Canada S4S 0A2
E-mail: kathy.nolan@uregina.ca

TEACHER EDUCATION & DEVELOPMENT | RESEARCH ARTICLE

Beyond tokenism in the field? On the learning of a Mathematics teacher educator and faculty supervisor

Kathleen Nolan[1]*

Abstract: Supervision of student teachers in their field experience is one of the practices that characterizes the work of many teacher educators. This paper takes up the issue of mathematics teacher education field experience, drawing on the conceptual tools of Bourdieu's social field theory to interpret data from a self-study on the role of supervision "in the field." The data storylines presented in this paper convey one mathematics teacher educator's efforts to disrupt and reconceptualize the network of relations in teacher education field experience, with a goal of understanding how one's professional practice as a supervisor might shape and influence a more dynamic view of these networks. The paper argues for taking a reflexive stance in teacher education, to reveal the habits and cultural capital shaping action in/of the field, and to support teacher educators as they trouble the discursive network of relations—represented in this paper through five storylines—of mathematics teacher education field experience and associated supervision.

Subjects: Classroom Practice; Continuing Professional Development; Educational Research; Mathematics; Mathematics Education; Newly Qualified Teachers; Teacher Training; Teachers & Teacher Education; Teaching & Learning

ABOUT THE AUTHOR

Kathleen Nolan is an associate professor in Mathematics Education at the University of Regina (Saskatchewan, Canada), where she teaches undergraduate and graduate courses in mathematics curriculum, qualitative research, and contemporary issues in education. Kathleen's current research program, entitled *Reconceptualizing Secondary Mathematics Teacher Education: Critical and Reflexive Perspectives,* is funded through a 3-year *Social Science and Humanities Research Council* (SSHRC) of Canada Insight Grant. Bourdieu's social field theory features prominently in this research to study issues of teacher identity, the regulatory practices of schooling, learning and knowing, and the social practice networks of teacher education field experience. She is author and co-editor of two books as well as author of several book chapters and peer-reviewed journal articles (in, for example, the *Journal of Mathematics Teacher Education* and *Educational Studies in Mathematics*).

Kathleen Nolan

PUBLIC INTEREST STATEMENT

The education of new mathematics teachers is a global concern, with the role of the classroom practice-based aspect (or field experience) of teacher education programs being a heavily debated topic. Some believe teacher education programs should place more emphasis on classroom practice and new teacher mentoring and supervision. This paper takes up the topic of supervision of student teachers in their field experience, one of the practices that characterizes the work of many university teacher educators. The paper draws on aspects of social theory (specifically, Bourdieu's social field theory) to understand data from a mathematics teacher educator self-study research project. In that research project, the teacher educator studies her own professional practice as a field experience supervisor. The study sheds light on how her supervision practice is shaped and influenced by a number of "others" in the field—student teachers, cooperating teachers, university administrators, and the structure of schools.

1. Introduction

> *Here I am, once again sitting in the back of a grade 10 mathematics classroom. My intern teaches to her perfectly constructed backward lesson plan on linear equations. I observe the rhythm of student heads bobbing up and down as they transfer words, symbols, and graphs from the whiteboard to their notebooks. My head also bobs up and down, observing and taking my own notes. And my head moves side to side as I ponder stuck places in teaching mathematics, and in teacher education. This is what we call supervision, but there is nothing super about what's in my vision. Are the grade 10 students learning from their notes? Is anyone learning from my notes? Compliance seems to be the real lesson here.* [Researcher journal entry]

Field experience supervision constitutes a key aspect of the work of many teacher educators. While the specific nature of this work varies significantly across teacher education program contexts, one belief about the work appears to be common: supervision in the field fails to reflect the complexity of teaching and learning to teach. In the words of Deborah Britzman (2009), "... supervision is devoid of the irony needed to engage in what is unknowable about our work as teachers" (p. 387). She offers a valuable critique of supervision in the field of education, stating,

> ... our vocabulary confines supervision to the immediacy of experience by privileging what is known as instruction on "best practices": the work is treated as if it is a behavioural problem of applying the stimulus of performance objectives to the engine of the student's learning and of outlining next steps. (p. 387)

However constructed and conceptualized, supervision of student teachers in their field experience (also referred to as practicum or internship) is one of the practices that characterizes my work as a mathematics teacher educator and faculty advisor (supervisor). In addition to constituting one of my realities as a teacher educator, I also see it as an opportunity for studying my own learning about what shapes my identity as teacher educator, faculty advisor, and researcher.

This paper takes up the issue of mathematics teacher education field experience, with a particular focus on the role of teacher educator as faculty supervisor "in the field". In the text that follows, I discuss my role as a faculty advisor in a self-study research project that has evolved over the years through (and up against) various models or visions for enacting field experience and my supervisory role. While the evolution of these models and visions over approximately six years is an interesting story in itself, the study (and this paper) maintains its focus on the tensions and disruptions encountered as I attempted to move my role as a faculty advisor beyond tokenism in the field. In other words, instead of providing a detailed account of the modifications I introduced into my version of my university's traditional internship model, I focus more on illuminating the network of relations within which my own identity and learning as teacher educator and faculty advisor is being (re)produced as I seek to reconceptualize my role within the internship experience.

The paper draws on the theoretical framework of Bourdieu's social field theory to understand and interpret the evolving story told by the self-study data. Bourdieu's key concepts, or "thinking tools," of habitus, field, capital, and doxa are used in this paper to put forward a way of visualizing the networks of social relations in the field of field experience. Elsewhere, Bourdieu's concepts have been further shaped and elaborated upon by drawing on the ideas and language of mathematics graph (network) theory (see Nolan, 2014a). Both theories, when interlinked in a unique and playful manner, lend themselves to a way of conceptualizing how networks of relations feature prominently in (re)constructing the field of teacher education, and token faculty advisors within. In the text that follows, a review of the literature in the field of teacher education and supervision is followed by a brief

description of my university's traditional model for internship faculty supervision and an overview of ways that I attempted to disrupt this model (to set the context for the study and data). Following this, I move into a presentation and discussion of the tensions I experienced as I attempted to disrupt the well-established network of discourses and relations in the field (of field experience) and to move my role as a supervisor beyond tokenism in the field.

2. Review of the literature in the field

The field of teacher education is being researched extensively from diverse perspectives. The study of theory–practice transitions from university mathematics curriculum courses to school practicum has been a prominent one, including those interested in making the transition a smoother one (Jaworski & Gellert, 2003; Nolan, 2006) as well as those resisting the existence (or at least the language) of a theory–practice dichotomy (Zeichner, 2010). In addition, there are numerous and theoretically diversified studies on becoming a mathematics teacher, from those with a poststructural focus on identity constructions (Brown & McNamara, 2011; Klein, 1999; Nolan & Walshaw, 2012; Walshaw, 2010; Williams, 2011) to those with the more technical concern of understanding the skills and content knowledge required by teachers (Ball, Thames, & Phelps, 2008; Chapman, 2013). More recently, the field of teacher education research in general has been paying much closer attention to the structures and roles of that specific component of teacher education programs referred to as the school practicum or field experiences (Cuenca, 2012; Falkenberg & Smits, 2010; Mattsson, Eilertsen, & Rorrison, 2011).

Teacher education field experience research reports on, and attempts to address, the prevalent disconnect between university courses ("theory") and school-based practicum ("practice") (Bergsten & Grevholm, 2008; Malderez, Hobson, Tracey, & Kerr, 2007). A portion of this pool of research de-emphasizes theory/practice and university/school binaries by proposing models for field experience based in close university–school collaborative approaches (Reynolds, Ferguson-Patrick, & McCormack, 2013; Van de Ven, 2011), professional learning communities (Beck & Kosnik, 2006; Ferguson & Lindo, 2013), third spaces (Garrett, 2012; Zeichner, 2010), third culture (Cochran-Smith & Lytle, 1999), and even spaces of *nowhere* (Grenfell, 1996).

> At the university, [student teachers] are eager to learn and qualify as teachers, but they are unsure of the mixture of academic and practical content of the course. In the school department, it is as if they are on loan. They are not really students but they are not yet teachers either. Moreover, they are unsure who is supporting them, when, and who is assessing them, and when. It is as if they are *nowhere*, as neither site provides a permanent anchor for their experience. (Grenfell, 1996, p. 297)

Above, Grenfell acknowledges the difficult spaces in which student teachers find themselves but, he asserts, such spaces are absolutely necessary in becoming a teacher because they position students with agency; that is, *nowhere* positions student teachers in a space/place where they are expected "to react" and decide for themselves.

With respect to the research on different models for field experience, Bullough et al. (2002) suggest "[t]here is a growing need for experimentation with configurations of field experience and for the generation and study of new models to determine their effectiveness" (p. 69). Van de Ven (2011) is less than optimistic about the reality of new models, stating that "[n]ew ideas on teacher education … hardly ever become reality in daily practice. They appear to remain just rhetoric." (p. 191) New models remain rhetoric, I claim, due to the pervasive and frequently misrecognized support for old models. Research continues to show that prospective teachers view the practice-based experiences of teacher education as the most important part of their program and the most significant influence on be(com)ing a teacher and shaping a professional identity (Britzman, 2003; Malderez et al., 2007; Nolan, 2014b). Yet, with such value placed on field experience, it is puzzling that so few teacher education programs are prepared to seriously examine "whether the 19th-century apprentice model is still relevant" (Britzman, 2000, p. 200). Whereas the apprentice model is promoted as a harmonized

triad (intern, cooperating teacher, and university supervisor all in a productive relationship with each other), research actually indicates that the relationship most valued by prospective teachers in the field is that between him/herself and the cooperating teacher, not the university supervisor; and that the knowledge of most worth is that of the "real" school mathematics classroom, not the university classroom (Nolan, 2012). Positioned in different "discourse communities" (Van de Ven, 2011, p. 199), teacher educators (university supervisors) and school teachers (cooperating teachers) often hold quite different perspectives (or, worldviews) on theory and practice, and on *reflection on* theory and practice. Clarke, Triggs, and Nielsen (2013) offer that the apprenticeship model "remains dominant in many learning to teach contexts as evidenced, among other things, by an emphasis on the technical dimensions of teaching in the interaction between cooperating teachers and student teachers" (pp. 28–29).

Darling-Hammond (2009) refers to the practice side of teacher education as "fairly haphazard, depending on the idiosyncrasies of loosely selected placements with little guidance about what happens in them and little connection to university work" (p. 11). In contrast to Männikkö-Barbutiu and Rorrison (2011), who believe that "[p]racticum is a time when preservice teachers can … take action and try out different strategies, personas, teaching methods and pedagogies to gain new understandings of the dynamics of teaching and learning" (pp. 54–55), research in the area of mathematics teacher education suggests that in fact the practicum is mostly about compliance and regulation (Brown, 2008; Nolan, 2008). According to some (Towers, 2008; Van Zoest & Bohl, 2002), the school intern placements—the "real" mathematics classrooms—are frequently not well-aligned with reform-based philosophies and pedagogies being advocated in teacher education programs. Thus, the question of whether prospective teachers actually get to try out new ideas and approaches in their school-based practicum or merely get to observe and mimic their cooperating teachers' practice (Britzman, 2003; Clarke et al., 2013) is of great debate.

University supervision (who does it, when, and how), as well as the relationships between university supervisors and student teachers, are commonly researched, yet highly contested topics (Caires, Almeida, & Vieira, 2012; Turunen & Tuovila, 2012). A sizeable portion of the research on/in field experience calls for a much stronger role to be played by the cooperating teacher, even to the point of calling for a practicum turn in teacher education where "[e]xperienced teachers should be involved in every aspect of teacher education programs" (Mattsson et al., 2011, p. 241). It is precisely this practicum turn that is feared by Grenfell (1996) in lamenting how governments and policy makers are promoting "schools as the best place for training" (p. 289), thus reducing theory in courses and proposing practice "as sufficient for gaining professional competence" (p. 289).

It is clear that the jury is still out on many of these field experience issues—the role of the cooperating teacher, the role of supervision (and the university faculty advisor within), even the role of practicum in general. It is a time when new ideas and imaginings are needed in teacher education and field experience supervision. Britzman (2009) offers suggestions for how to (re)imagine supervision and its role in teacher education, proposing that we think of supervision "as a dialogue made from the exchange of words on the nature, tension, surprise, anxiety and mishap of interpreting the constructions of practice and as effecting the practitioner's transformation" (p. 389). The research informing this paper represents my efforts, as one mathematics teacher educator and field experience supervisor, to begin such (re)imaginings.

3. Background and context for study

In my university's four-year undergraduate teacher education program (in Canada), the culminating field experience is a four-month internship (practicum, field) experience in schools. Each prospective teacher (intern) is paired with a cooperating (mentor) teacher in the school and assigned a university supervisor (faculty advisor). Each faculty advisor works with approximately four interns over the internship semester, and is expected to visit, observe, and conference with each intern 3–5 times during this four-month internship. Based on my experience working with/in this model for many years, I view it as problematic and "deficient" in at least two ways.

Firstly, a mentorship relationship between faculty advisor and intern (and, hopefully, cooperating teacher) based on only 3–5 visits over four months is not adequate to bring about any substantive learning in/from practice. The process does very little to disrupt and challenge the view that teacher education programs merely train and prepare prospective teachers for the *real* experience of school classrooms. In those *real* classrooms, the intern works closely with a cooperating teacher who has, undoubtedly, much to offer in the way of mathematics pedagogical insights. However—and this is the second problematic associated with the traditional internship supervision model—what the cooperating teacher has to offer does not necessarily align with the aims and content of the university mathematics curriculum courses that interns have taken. The courses that I teach at the university prior to the internship semester emphasize teaching and learning mathematics through inquiry (a philosophical and pedagogical approach that is often quite foreign to prospective mathematics teachers). Thus, it becomes important that I serve in the capacity as mentor to prospective teachers (interns) in these approaches, especially when they encounter more traditional discourses for teaching and learning school mathematics during internship. There is a need to mentor prospective secondary mathematics teachers as they negotiate transitions from the theories of inquiry-based pedagogical strategies for mathematics (as emphasized in university curriculum courses) to the practices of the classroom; that is, as they negotiate different habitus-field fits in becoming mathematics teachers. In my experience, 3–5 visits over four months are just not sufficient.

As a consequence of these two perceived deficiencies that I have outlined, my role as a faculty advisor in the traditional internship model has felt superfluous, even token, as reflected in the following journal entry:

> These days, I'm reflecting often on my faculty advisor role in the context of feeling like a third wheel—one not valued on the journey that seems, for all intents and purposes, to be mapped out for two: intern and cooperating teacher. Also, this experience as a faculty advisor causes me such angst each time I enter a high school mathematics classroom and constantly encounter the mismatches between the university discourses (of my curriculum courses, for example) and those of the schools. I am at a complete loss for how to enact my role amid these recurring regulative discourses. I just want to call in sick rather than visit a school as a faculty advisor. But now I'm experiencing a different call—what might be thought of as a deep survival instinct—to explore more innovative models for mentoring and supervision. It will be a relief to at least attempt to move beyond the unspoken token. [Researcher journal entry]

My response to the survival call to initiate more innovative models for mentoring and supervision began through an exploration of a blended real and virtual model for faculty advising during field experience (a self-study research study referred to as "the e-advisor project"). The e-advisor project and internship model took on various characteristics as it evolved over several years, as I adapted my internship "supervision" approaches in response to research data. During each year of this self-study, a Professional Learning Community (PLC) was sustained "virtually" through the use of desktop video conferencing (*Skype* and *Adobe Acrobat Connect Pro*), as well as the recording and analysis of classroom teaching videos (*Flip cameras*), online chat and discussion forums, and collaborative authoring/editing through Wiki spaces. These multiple technologies enabled me to supplement the "real" (3–5) school visits with "virtual" visits, in an attempt to move the faculty–student conferencing process into a mentorship relationship that was ongoing, synchronous, and without geographical boundaries. This paper draws on data from that e-advisor study, framed in an analysis informed by Bourdieu's social field theory, to conceptualize the network of relations that shaped me as a faculty advisor in attempting to move my role beyond tokenism and, ultimately, to reconceptualize secondary mathematics teacher education field experiences.

4. Theoretical framework

In reconceptualizing mathematics teacher education, there are more difficult questions to ask than those which can be readily answered through a collection of teaching techniques. The intent of these difficult questions "is not to seek truth or find a final resolution, but rather to ask how the discursive formulations have taken the shape that they have" (Brown & England, 2005, p. 449). The

e-advisor study informing this paper challenges and disrupts traditional discourses of teacher education programs and associated field experience, tracing the intersections of identity, agency, and reflexivity in mathematics teacher education using Bourdieu's sociological theory (Bourdieu, 1977, 1990a; Bourdieu & Passeron, 1977). As shown in this paper, the key concepts of Bourdieu's social field theory can help reveal the ways in which teacher education field experience and supervision are enacted through ambiguous and sometimes contradictory negotiations.

It is true that Bourdieu's conceptual tools are but one valuable set that can be drawn from a deep and expansive conceptual toolbox. There are, in reality, many possible lenses through which to view, explore, and interpret research on mathematics teacher education and associated field experience. Research in the field of mathematics teacher education draws on the theoretical constructs of, among others, Foucault, Lacan, Derrida, Gadamer, and Bernstein (Black, Mendick, & Solomon, 2009; Brown, 2008; Walshaw, 2010), as well as theories of cognitive and social psychology (Schoenfeld, 2011). In fact, Walshaw (2008) suggests "the theoretical resources available for explaining participation in and engagement with teaching practice are considerably more expansive than at any previous time" (p. 119). However, as shown in this paper, I find Bourdieu's work to be especially valuable in how it offers a way to account for the complex interplay between the individual and the dynamics of the social. The key concepts of Bourdieu's social field theory confirm the complexities of becoming a teacher by focusing on the dynamic relationships between structure and agency within a social practice. Such an approach highlights the network of relations and discursive practices that support (and [re]produce) traditional practices in field experience models, acknowledging the normalized practices and dispositions of schooling as strong forces in shaping teacher educator and faculty advisor identity and agency (Nolan, 2012). Specifically, I draw on Bourdieu's social field theory (specifically, the concepts of habitus, field, capital, and doxa) to expose the discursive productions of the network of relations constituting mathematics teacher education field experience. As communicated earlier, what is important to note about this paper is that its intent is not to present, analyze, and discuss large amounts of the research data per se, but to reflect on the self-study data in the context of illuminating this network of relations within which my own identity and learning is being (re)produced.

Bourdieu (1990a) claims that 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. Field and habitus are central to understanding this social network of relations since the two concepts are produced and reproduced in a dialectical relation to each other through social practice. Even though habitus and field are dynamic—always evolving, always partial, and never a perfect match for each other—a person will generally feel most comfortable in a field where her habitus is a good fit with the logic and operation of the field. The traditional (legitimate and sanctioned) discourses of the field "persuade" prospective teachers toward a comfortable, non-conflicting habitus-field fit in their classrooms and schools. In other words, "fields provide something like magnetic attraction for agents who are disposed to engage in a given field (if their habitus is aligned to the field)" (Rawolle & Lingard, 2008, p. 732).

Another Bourdieuian concept of importance in understanding interactions between habitus and field is capital. Each of the agents/actors participating in the social practice of a given field is seen to bring particular resources and/or strategies, referred to as capital, to the domain, where (generally) "[p]articipation implies a shared commitment to the value of the activities of the field and of field-specific capital" (Warde, 2004, p. 12). Lin (2001) outlines a theory of social capital as one "eliciting the central theme that capital is captured in social relations and that its capture evokes structural constraints and opportunities as well as actions and choices on the part of the actors" (p. 3). Lin also maintains that "social capital is best understood by examining the mechanisms and processes by which embedded resources in social networks are captured as investment" (p. 3). Dimitriadis and Kamberelis (2006) express the dynamic relationship between these three concepts of Bourdieu's social field theory (habitus, field, capital) in stating:

> A field is thus defined primarily in terms of the kinds of practices that are common within it and the kinds of capital that may accrue to individuals who engage in those practices, and secondarily as the kinds of social relations that develop as people work to acquire and maintain the kinds of capital with the most purchase in the field. (p. 67)

Doxa is a further concept useful to the analysis and discussion of this paper. 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, thus working to ensure that the arbitrary and contingent nature of these discourses are not questioned nor even recognized. The meaning of doxa, or the doxic experience, lies in understanding that "[m]ost people, most of the time, take themselves and their social world somewhat for granted: they do not think about it because they do not have to" (Jenkins, 1992, p. 70). This unquestioned acceptance of what constitutes normal, natural, and necessary is what Bourdieu refers to as misrecognition (Bourdieu, 1990b). According to Deer (2008), "doxa allows the socially arbitrary nature of power relations … that have produced the doxa itself to continue to be misrecognized and as such to be reproduced in a self-reinforcing manner" (p. 121). Grenfell (1996) helps counter the deterministic view that is often associated with Bourdieu's concepts by offering the following network interpretation:

> Individuals are embedded, located in time and space, which sets up relations. These relations are not simply self-motivated and arising from individual choices but immanent in the site locations in which they find themselves. Such relations are differential and objectively identifiable. They are structured structures, but, equally, structuring structures in a generative sense. (p. 290)

This paper draws on these conceptual tools of Bourdieu's sociological theory to understand social relations in networks of practices, specifically those relations produced through mathematics teacher education field experience and supervision models.

5. Research methodology and methods

As a methodology, self-study can be defined as the intentional and systematic inquiry into one's own practice (Loughran, 2007). In teacher education, self-study is powerful because of the potential to influence prospective teachers, as well as impact one's own learning and practice as a teacher educator. Drawing on self-study approaches in my research highlights my conviction that the boundaries between research, teaching, and learning are blurred (Nolan, 2005). As Brew (1999) claims, "learning and research are both conceptualized as processes of constructing knowledge" and researchers should "recognize the ways in which their activities parallel those of students" (p. 298). Self-study embeds the learning acts of teacher educator as both researcher and learner, emphasizing that it is time "to break out of the tired old teaching versus research debate and define, in more creative ways, what it means to be a scholar" (Boyer, 1999, p. xii). By studying my own professional practice, I am in a better position to reflect on the relationships between research, teaching, and learning and to interrogate the discourses shaping my roles and practices as a teacher educator. I accept that a key "aim of self-study research is to provoke, challenge, and illustrate rather than confirm and settle" (Bullough & Pinnegar, 2001, p. 20).

My e-advisor self-study research project involved multiple and diverse forms of data, including reflective researcher journals and the reflective contributions of "others" involved in the story (mainly prospective teachers as interns). Data collection for this self-study included interviews and focus groups with interns during six internship semesters (2007–2012). The interviews and focus groups were conducted in person and through video conferences. As the researcher, I kept a self-study researcher journal to better understand and reflect on my role as a faculty advisor. For the purpose of data collection and also as a means of enacting my role as a faculty advisor, I used multiple communication technologies (such as desktop video conferencing, video flip-cameras, online chat and discussion forums, and collaborative authoring/editing through Wiki spaces) with the goal of creating and sustaining a professional development relationship between myself and my interns. I also used these technologies with a goal of disrupting traditional notions of teacher education as

"training" and "preparing" teachers and field "supervision", as will be discussed in the data themes that follow. While those were the key goals of my evolving e-advisor model for internship supervision, neither of these goals is explicitly the focus of this paper. Instead, the goals serve as the subtext for what I attend to in this paper; that is, an interrogation of the network of field experience relations, consisting of well-traversed pathways that I found myself both negotiating and resisting as I sought to construct new relations and pathways.

6. Presentation and analysis of data

The data storylines presented in this section convey narratives of my efforts to disrupt and reconceptualize the network of relations in mathematics teacher education field experience, with the ultimate goal of understanding how (or, if) my professional practice as a supervisor might shape and influence a more dynamic view of these networks. Each storyline is presented and analyzed in this paper through a uniform approach: first, the "typical" normative relation is described, followed by my initiative to disrupt the relation and possibly create new relationships and interactions, and then closing by viewing the storyline through the lens of Bourdieu's social field theory concepts.

6.1. Storyline 1: NOT sitting in the back of the classroom

Typically, my supervisory role as a faculty advisor positions me in the back of the classroom to "observe" an intern's mathematics lesson. This supervisory act is characterized by physical presence in the back of a high school classroom, from the start of the lesson until the end, engaged in note-taking on carbon copy "field experience observation" forms. This note-taking task is preceded and followed by brief pre- and post-conferences with the intern. Research in the area of teacher education supervision confirms this depiction of observation and conferencing as common (Britzman, 2009; Rorrison, 2010; Zeichner, 2009). This first storyline of the data describes my efforts to disrupt these normalized techniques of "super"vision and surveillance, and how the change was received by my interns.

I attempted to disrupt this "back of the classroom" picture by requesting that each intern use a flip video camera to record three short segments of a lesson and then to send/upload the videos for me to view. Following my viewing of the videos, I met (post-conference) with the intern (via Skype). I began this meeting by asking the intern to discuss *why* she selected these particular aspects of the lesson to capture on video for me to see. I was intent on disrupting the usual faculty advisor act of identifying particular aspects of the lesson to focus and comment on by instead requiring the interns to initiate this decision and reflection based on their own video selections.

Principally, the interns were unable to understand and accept how this process of viewing such brief video footage could possibly equip me (the faculty advisor) with enough "evidence" of their teaching such that I could provide them with appropriate feedback for their professional development. As one intern commented:

> ... you don't get the whole feel of the classroom through a video. Like you might see it, but, to me, it's like the whole emotion of it and the whole flow of things isn't really there because it's chopped into little bits and pieces. (Intern, 2011)

This data storyline contributes to the network of relations in how it works to sustain and reproduce traditional pathways of faculty supervision based on surveillance and "super"vision techniques. The story is not only sustained by interns and cooperating teachers within the school field itself. In fact, research indicates that many university supervisors still firmly believe in the importance of regular and complete classroom observation. Britzman (2009) notes that many of her university colleagues feel anxiety "when she or he is asked to imagine supervision without the classroom observation and ... feel that their own effectiveness would be compromised if they could not see what is going on in the student teacher's classroom" (p. 391).

Over the years of implementing this video approach, a few interns were able to appreciate the process, but only as long as I was still actively visiting the school as well. For the most part, however, both interns and their cooperating teachers generally viewed this video initiative as an insufficient enactment of my role, even to the point of suggesting that it was merely my own personal attempt to save time and "shirk my duties" as a faculty advisor. This speaks to a set of core values and discourses that constitute a specific way of "doing" faculty supervision, one that is natural, normal, and misrecognized.

6.2. Storyline 2: metaphorically speaking

The second storyline conveys my efforts to understand my interns' perceptions of my role as a faculty advisor in their professional development as interns and becoming teachers. Since my research initiative set out to expand my role as a faculty advisor to include many more contact hours than what is typical, I wanted to understand how they perceived this expanded role. Thus, during a focus group session with a group of three interns in one semester (2010), I asked them to comment on my role as faculty advisor and its overall value to them in terms of their professional development during the internship semester. The following quote from one intern illustrates an example response to this question:

> If our coop is doing their job right they really *should* be doing that professional development process with us, so having you there is just kind of extra, I guess. I don't know if it's completely necessary. But if you *were* to do it, I would probably still prefer that you come out and see me … like, if I had had problems with [the coop] then I would want you there, I would *need* someone else, but since we got along then the roles kind of seem the same to me. (Intern, 2010)

I pursued this line of questioning a bit further, but the underlying message of their responses remained consistent: I was "just kind of extra." Later, I reflected in my journal how I was taken aback by their comments:

> *Wow. That's harsh. My efforts to disrupt the token and remote role of the faculty advisor have been constituted by the interns as "extra" and much the same as the cooperating teacher has to offer. In their eyes, I've not expanded and redefined my role in the manner I set out to. Instead, the interns have constructed an identity for me as liaison, mediator, umpire, even peacemaker. So, as long as there are no "problems" with the cooperating teacher, I am not needed. Hmmm. But, I wonder, what I was actually hoping for? What would be my preferred metaphor? Maybe I want them to view my role as superaction (rather than supervision), or even better as "transformation activator" (sounds like a superhero sold by Martell).* [Researcher journal entry]

In another year of the study (2011), an intern suggested that my role was like that of "a fine tooth comb":

> I think that it's good that you're distinct from the cooperating teacher. I feel kind of like with my cooperating teacher, I come to class the morning of. We do a quick little preconference. I teach, and then we do post conference. Whereas with you, I feel like it's very specific, focused on one specific lesson and looking for perfection almost. So I think kind of you're more the fine tooth comb of the operation, and [my coop] is more of the overseeing almighty part of the operation, if you know what I mean? (Intern, 2011)

This storyline of "metaphorically speaking" confirms that interns value their cooperating teacher's experience and perspective first and foremost, and that the role of the university supervisor takes on a distant second, or even unnecessary "extra". In a review of research on the ways in which cooperating teachers participate in teacher education, Clarke et al. (2013) also found that the roles are valued quite differently. They echo other research in confirming how "the role of the cooperating teacher has always been regarded as important within teacher education" (p. 4), whereas perceptions on the role of the university supervisor are less uniform and agreed upon in the literature. It is

interesting to note that Clarke et al. also report that "cooperating teacher feedback remains largely fixed on the technical aspects of teaching" and tends to be "more confirmatory (positive) than investigative (reflective) in nature" (p. 13), which leads me to propose a "survival of the fit" (Nolan, 2014a) mindset. In other words, a positive, confirmatory approach to interacting with the interns in their process of becoming (a teacher) is a much better fit with their own habitus than one which challenges them to engage in deep and substantive reflection, which might in turn demand a shift in habitus. Cooperating teachers provide the interns with feedback in the form of practical tips and techniques, whereas I am asking them to spend time in Grenfell's (2006) *nowhere* space, "areas in which they could engage with the contradictory elements of teaching and respond in line with their own developing pedagogic habitus" (p. 301).

Once in the schools for their field experience, prospective teachers are "confronted with the task of learning the discursive codes of practice" (Walshaw, 2007, p. 124) in the secondary mathematics classroom, and no longer in my own university classroom. Interns identify their cooperating teachers as being much better positioned to initiate them into these practices and hence the practices themselves are unquestioned and misrecognized. These discursive codes of classroom practices constitute, in part, the network of relations that Bourdieu writes about. In the language of network theory, the pathways of already well-established classroom practices hold more valuable cultural capital in the field.

6.3. Storyline 3: "I appreciate the opportunity but …"

In one year (2012), several months before the internship semester was about to begin, I contacted all prospective mathematics teachers who were about to engage in their internship and invited them to participate in my digitally enhanced research-based internship experience. I outlined several potential benefits of participating (including funds for resources, a certificate of participation, etc.) so that they might view this new internship model as an opportunity for personalized and dedicated mentoring, not just as "my research project." This storyline contributes to the network of relations in how my invitation was met with resistance and refusal on the part of prospective teachers.

One intern responded, "I just want to focus on my internship, without any distractions" or extraneous research activities. Another intern thought that "digitally-enhanced" meant that my internship model would help him book school computers for his classroom or get his students twitter accounts and clickers (and he was not interested). Yet another intern declined participation because she wanted a placement in a specific school division, with a specific cooperating teacher, thus not interested in my suggestion that she complete her internship in a school where a cooperating teacher had already volunteered to be part of this new model. In any case, instead of embracing the internship as an opportunity to grow and participate in a professional development learning community, the interns were caught in a discourse of viewing internship as a four-month-long job interview.

This particular storyline is interconnected with the next one since prospective teachers hear many stories of internship and "what it looks like" so they are not easily convinced that they *could* participate in their internship differently, in ways not well-traversed. Everything they have seen and heard around them during their previous three years in the teacher education program points to one traditional internship discourse, and that consists of being taken under the wing of a cooperating teacher for four months, while complying with the occasional observational visit from the faculty advisor. Discourses counter to this dominant one are readily dismissed.

6.4. Storyline 4: placement protocol

The fourth storyline is, in some ways, a view of the third storyline from the perspective of the university administration and field experience placement office. As written about elsewhere (Mulholland, Nolan, & Salm, 2010), our undergraduate teacher education programs are regarded throughout our region as "perfect" just the way they are, with stakeholder resistance in the form of "[s]ustained concern for, and attention to, preserving what works well" (p. 317). In many ways, preservation has

taken hold in our Faculty, such that it seems more convenient to choose the path of least resistance when it comes to disruptions and divergences in field experience models.

> *This is becoming wearisome. While I feel I can no longer play the game of token faculty advisor in the back of mathematics classrooms, I am also experiencing such a powerful push by normative expectations that altering my role (when I am just one of many players in this game) is proving impossible. Drawing on Bourdieu's metaphor of playing the game, I am learning so much about who the players are in the game of field experience. Along with the players in the field, I am also noticing the existence of many coaches, managers, and referees in this network. Prior to this research, I might have mistakenly thought that, as a faculty advisor, I had a more significant role in the game. OK, maybe not a referee but certainly at least a coach, right? Not so. It's made me ask the question of who gets to make and change the rules of this game? Who has the capital? It's not me, that has become obvious. As far as I can tell, no one at the coach, manager or referee level has a desire to introduce new rules for this old game! It's probably best to accept that the rules are fairly arbitrary in the first place, and that I should just hide amidst the doxa and concede "game on".* [Researcher journal entry]

While there has not been any explicit suggestion from these university offices that I should abandon my research efforts to reconceptualize secondary teacher education through an alternative field experience (internship) model, neither have there been many tangible efforts to officially endorse the model by providing strategic supports. In other words, my interpretation is that I may go forth and reconceptualize (in my research) as long as I can successfully handle the extra work burden; as long as I can convince school teachers and principals to "buy into" my internship model; as long as I can persuade prospective teachers to participate in an internship experience that will require them to step away from a "survival of the fit" mode (and possibly toward a space of *nowhere* for a while). Along with these expectations, there is another especially covert and misrecognized expectation and that is that I do not critique or in any way challenge the teaching practices of our (volunteer) cooperating teachers. This point is discussed by Van de Ven (2011), who claims that some teacher education programs refer "to schools as 'clients' that have to be served according to their wishes [and] argue that they need schools in order to have sufficient places for their students' placements - and of course you do not criticise your clients" (p. 190).

Struggling to initiate change and move my role beyond tokenism in the name of my research program and my own habitus-field fit has thus far afforded me quite restricted pathways for maneuvering any form of valuable innovation within the current network of field relations. Unsurprisingly, the shift to an alternative internship approach is severely bounded by the network of legitimate structures and practices in the field, including those forms of cultural capital associated with the current habitus-field matches of interns and cooperating teachers within schools.

6.5. Storyline 5: "If the process becomes disruptive to students or the intern's growth …"

A final storyline in the network of field experience relations relates to the part played by cooperating teachers. It could be said that school teachers who volunteer to participate as a cooperating teacher are already "sold" on the current model for field experience, or practicum, in the schools. According to Clarke et al. (2013), cooperating teachers view an important aspect of their work as *modelers of practice*, with "a strongly held expectation that the practicum is an opportunity for student teachers to observe the modeling of teaching practice" (p. 15). In addition to modeling practice, cooperating teachers characterize "their own role as being that of guide, advisor, source of resources, 'voice of warning,' facilitator, and, especially, someone responsible for giving feedback" (Bullough et al., 2002, p. 75). In the case of the teacher education program at my university, cooperating teachers have full responsibility for the evaluation of interns in their field experience and (as has been discussed already) the role of university faculty in field experience is characterized by minimal involvement within the current model for intern supervision. It is not surprising then that my desire to become more involved in field experience has been met with considerable skepticism, even suspicion. In the following journal entry, I reflect on a comment from one cooperating teacher when I requested that she and her intern become part of this newly proposed learning community model for internship.

I had been trying to contact this cooperating teacher for some time. The intern who has been assigned to work with her has expressed interest in being part of my enhanced internship model, so I thought it important that her cooperating was on board, at least for the sake of the intern's involvement if not for her own interest in participating. I guess she needed some time to think about it but finally she responded. Her response took me by surprise. The cooperating teacher informed me that she would go along with my internship model as long as 'the process does not become disruptive to the students or to the interns' growth within the classroom', at which point (she informed me) she and her intern would have to re-evaluate their participation. My first reaction to this response was that, in fact, disruption and growth were exactly my aim in having interns participate in this new model. I didn't write that in the e-mail reply however. Instead, I chose the path of least resistance, and welcomed her into the community. Apparently, I recognized (and acquiesced to) her cultural capital. [Researcher journal entry]

In discussing the typical teacher education field experience triad (student teacher, cooperating teacher, and university supervisor), Garrett (2012) claims that "the triad is problematic before it even begins its work" (p. 159). He states that the university supervisor "is 'othered' into the third position as the student-teacher and mentor-teacher dismiss 'theory for practice'" (p. 159). In the example above, the cooperating teacher views additional out-of-school learning community sessions with other interns, cooperating teachers, and the university supervisor as "extra", even as a possible interference in covering the important practical classroom agenda. My involvement as university supervisor is "othered" when I introduce obstructions in the process of traversing the usual paths in the usual ways for internship.

As a cooperating teacher immersed in the network of relations that characterizes teacher education field experience and her role in it, it is easy to get caught up in exercising one's existing cultural capital in the field of mathematics school classrooms. As I attempt to influence/reconstruct some of the well-traversed pathways in the network of field experience, I am reminded that cultural capital "is a credit, it is the power granted to those who have obtained sufficient recognition to be in a position to impose recognition" (Bourdieu, 1990b, p. 138). In the traditional model, cooperating teachers most certainly possess this credit to impose.

7. Bourdieu and networks: the work of interpretation

The five storylines constituting a network of relations presented in this paper—all related to the social practice of mathematics teacher education field experience and supervision—draw attention to how tightly woven together the network of relations within a field are. If one ignores, for a moment, the teasing apart of these storylines (which I have done for the purposes of making sense of the self-study data) it can be seen that the storylines reaffirm the core of established and taken-for-granted social practices of teacher education and field supervision—what could be referred to as teacher education and supervision doxa. The data from this study confirm the status of several doxic pathways that construct this network and just how entrenched this doxa is in the network of normalized relations in the field of teacher education.

According to Bourdieu and Passeron (1977), the essential function of an educational system (ES) is cultural and social reproduction, and thus "an ES must produce a habitus conforming as closely as possible to the principles of the cultural arbitrary which it is mandated to reproduce" (p. 57). The storylines presented here highlight the cultural arbitrary being reproduced as the network of field experience relations, consisting of such discursive productions as: my failed attempts to bring about significant disruptions to the traditional model of supervision; interns' constructions of internship as a four-month-long job interview; the university's acceptance of a model of supervision characterized by minimal and token involvement on the part of teacher educators; cooperating teachers' constructions of university supervisors as "other" or "extra" in the network. These discourses constitute and reproduce the culturally arbitrary pathways or relations within the field of secondary mathematics teacher education and field experience. These field-specific discursive productions reproduce a network of relations governing prospective teachers' and cooperating teachers' pedagogic actions in the field.

At this point, it is worth cautioning against reading over-simplified and deterministic conclusions from this text, since Bourdieu's social field theory is frequently critiqued for being too structural and deterministic. Indeed, such a criticism must be taken seriously in this work as it serves little purpose to study what I consider to be overly regulated structures (such as school field experience) using an equally inflexible and regulated structural theory. That being said, Bourdieu's social field theory helps me, in this research, to "notice" the network of relations and confluence of data stories that construct it. Such a network construction is not, however, intended to preclude individual agency and/or the potential for strategic shifts or movements in the network, as illustrated in Bourdieu's analogy to playing a game.

Bourdieu's view is that adjustment to the demands of a field requires a certain "feel for the game" (Bourdieu, 1990a, p. 66). Similar to games, social fields are constructed with specific structures and rules, and the relative smoothness of the game/field often depends upon the players unquestion-ingly accepting and following these rules, regardless of how arbitrary they might seem. In the case of the storylines presented here, the structures and rules of the field of field experience seem natural and unquestionable ("it's just the way internship is done"), resulting in a "feel for the game." Viewing these networked (and doxic) storylines through the lens of Bourdieu's theory is a reminder of how "reproduction is achieved because social members internalise the 'rules of the game' and so adopt practices that ensure their 'unconscious' replication" (Nash, 2002, p. 272). As evidenced in the data, if teacher educators (faculty advisors) exercise agency by introducing new rules for the old game, institutional structures and pressures will most certainly return them to their original form of embodied cultural capital (the dominant discursive dispositions of mind and body). Unfortunately, the storylines are easily maintained and reproduced as long as agents (particularly those who ben-efit from them) carry on as if this is "just the way things are done," thus drawing attention away from the (arbitrary) origins or roots and the promises of constructing alternative pathways in the network of relations.

Bourdieu's social field theory helps me, and potentially other scholars in the field, become aware of the competing and conflicting negotiations that must take place to disrupt the pathways in the net-work of field supervision. This highlights, for me, that the passive act of *wanting* to disrupt the network of familiar habitus and field interactions is easier said than done when the network of relations remains intact. As shown in this paper, the storylines are so inextricably linked to, and implicated in, each other that it is challenging to disrupt or dismantle the network they form. On the hopeful side, however, I think a study such as this one—highlighting the learning of one mathematics teacher educator—is valuable for the field of teacher education and curriculum classes, where the normative storylines can be used to initiate reflexive analysis of field experience and supervision doxa before entering the practi-cum field. Grenfell (1996) offers an insightful starting point to guide this reflexive approach:

> Becoming a teacher means "restructuring" pedagogic habitus, as a kind of play-off of the new against the old. To do this, to paraphrase Frawley (1987, p. 180), students who train to teach have ultimately to "unlearn" the teaching discourse and pedagogic mind in order to participate adequately in the new discursive space as a teacher. It is clear that this "unlearning" is not an easy experience, and the result of it is often considerable cognitive disruption. (p. 299)

Through reflexivity and "cognitive disruption," one can target underlying themes such as compliance and regulation sustaining these pathways/links. Adopting a reflexive stance in teacher education would aim to expose the socially conditioned and subconscious structures that underlay the repro-ductive nature of the network of relations. This reflexive stance in teacher education programs could work to reveal the habits and cultural capital shaping action in/of the field, and to support teacher educators as they trouble the discursive network of relations—represented in this chapter through the five storylines—of teacher education field experience and associated "supervision".

8. Closing thoughts

Studies focused on the learning of teacher educators make important contributions to the growing body of research in the area of teacher education in general (Cochran-Smith & Zeichner, 2010; Falkenberg & Smits, 2010) and mathematics teacher education specifically (Jaworski & Wood, 2008; Tzur, 2001; Zaslavsky & Leikin, 2004). This paper has re-presented a construction of self-study data that conveys the story of how one teacher educator experiences and attempts to live out a sense of agency when immersed in the powerful discourses of teacher education field experience models. It has done so, I believe, by revealing the discursive drive toward maintaining dominant models for teacher education field experience and supervision, out of which these five storylines were constructed.

Returning to the acts of research, teaching, and learning, Grenfell (1996) establishes "a need to rethink initial teacher education; to 'deconstruct' pre-set narratives used to represent it; and establish a more epistemologically informed approach to research" (p. 289). Bourdieu's social field theory has much to offer in a focus on teacher educator learning through the three fundamental and inter-related R's: reflexivity, relationism, and research (Maton, 2003, p. 56). Maton refers to actors being "relationally positioned within a field" and that "each actor has only a partial view of the game, acting accordingly" (p. 56). From this study I have learned about the critical distinction between the positions of actors, and the relational positions of these same actors within the field of practice. It is this relational positionality that requires further exploration through imagining a network of these actors, and the positions and relations between.

From this study I have also learned that understanding and reflecting on my own positioning as one actor/agent within network(s) of discursive relations is a demanding balancing act. I still feel a strong pull toward enacting my role as a faculty advisor differently—through, for example, an enhanced internship community model—but to use it as an opportunity to be reflexive as a community of interns, cooperating teachers, and faculty advisor on the significance of networks of relations. In other words, to create and sustain a community effort toward dismantling the networks of relations in the field that currently confirm and maintain token roles within by teacher educators. As I struggle to move beyond tokenism in the field, there is at least one other lesson that is valuable to share, and that is the importance of acknowledging my own complicity in (re)producing the network of relations in field experience and for supervision. In other words, as I endeavor to disrupt and reconstruct the network, in many ways I also comply with its structures and relations. It could be said that I am learning how to be strategic—I am careful not to disrupt the game so much so that no one will want to play with me anymore.

Author details

Kathleen Nolan[1]
E-mail: kathy.nolan@uregina.ca
[1] Faculty of Education, University of Regina, 3737 Wascana Parkway, Regina, Saskatchewan, Canada S4S 0A2.

References

Ball, D. L., Thames, M., & Phelps, G. (2008). Content knowledge for teaching: What makes it special? *Journal of Teacher Education, 59*, 389–407. http://dx.doi.org/10.1177/0022487108324554

Beck, C., & Kosnik, C. (2006). *Innovations in teacher education: A social constructivist approach.* New York, NY: SUNY Press.

Bergsten, C., & Grevholm, B. (2008). Knowledgeable teacher educators and linking practices. In B. Jaworski & T. Wood (Eds.), *The international handbook of mathematics teacher education. The mathematics teacher educator as a developing professional* (Vol. 4, pp. 223–246). Rotterdam: Sense.

Black, L., Mendick, H., & Solomon, Y. (Eds.). (2009). *Mathematical relationships in education: Identities and participation.* New York, NY: Routledge.

Bourdieu, P. (1977). *Outline of a theory of practice* (R. Nice, Trans.). Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511812507

Bourdieu, P. (1990a). *The logic of practice* (R. Nice, Trans.). Cambridge: Polity Press.

Bourdieu, P. (1990b). *In other words: Essays towards a reflexive sociology.* (M. Adamson, Trans.). Cambridge: Polity Press.

Bourdieu, P., & Passeron, J. (1977). *Reproduction in education, society and culture.* London: Sage.

Boyer, E. (1999). *Scholarship reconsidered: Priorities of the professoriate* (A special report of the Carnegie Foundation for the Advancement of Teaching). Princeton, NJ: Princeton University Press.

Brew, A. (1999). Research and teaching: Changing relationships in a changing context. *Studies in Higher Education, 24*, 291–301. http://dx.doi.org/10.1080/03075079912331379905

Britzman, D. (2000). Teacher education in the confusion of our times. *Journal of Teacher Education, 51*, 200–205. http://dx.doi.org/10.1177/0022487100051003007

Britzman, D. (2003). *Practice makes practice: A critical study of learning to teach* (revised ed.). New York, NY: State University of New York Press.

Britzman, D. (2009). The poetics of supervision: A psychoanalytical experiment for teacher education. *Changing English, 16*, 385–396. http://dx.doi.org/10.1080/13586840903391948

Brown, T. (2008). Comforting narratives of compliance: Psychoanalytic perspectives on new teacher responses to mathematics policy reform. In E. de Freitas & K. Nolan (Eds.), *Opening the research text: Critical insights and in(ter)ventions into mathematics education* (pp. 97–109). New York, NY: Springer. doi:10.1007/978-0-387-75464-2

Brown, T., & England, J. (2005). Identity, narrative and practitioner research: A Lacanian perspective. *Discourse: Studies in the Cultural Politics of Education, 26*, 443–458.

Brown, T., & McNamara, O. (2011). *Becoming a mathematics teacher*. Dordrecht: Springer. http://dx.doi.org/10.1007/978-94-007-0554-8

Bullough, R., & Pinnegar, S. (2001). Guidelines for quality in autobiographical forms of self-study research. *Educational Researcher, 30*, 13–21. http://dx.doi.org/10.3102/0013189X030003013

Bullough, R., Young, J., Erickson, L., Birrell, J., Clark, D., & Egan, M. (2002). Rethinking field experience: Partnership teaching versus single-placement teaching. *Journal of Teacher Education, 53*, 68–80. http://dx.doi.org/10.1177/0022487102053001007

Caires, S., Almeida, L., & Vieira, D. (2012). Becoming a teacher: Student teachers' experiences and perceptions about teaching practice. *European Journal of Teacher Education, 35*, 163–178. http://dx.doi.org/10.1080/02619768.2011.643395

Chapman, O. (2013). Investigating teachers' knowledge for teaching mathematics. *Journal of Mathematics Teacher Education, 16*, 237–243. doi:10.1007/s10857-013-9247-2

Clarke, A., Triggs, V., & Nielsen, W. (2013). Cooperating teacher participation in teacher education: A review of the literature. *Review of Educational Research, 20*(10), 1–40.

Cochran-Smith, M., & Lytle, S. (1999). Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education, 24*, 249–306.

Cochran-Smith, M., & Zeichner, K. (Eds.). (2010). *Studying teacher education: The report of the AERA panel on research and teacher education*. Washington, DC: American Educational Research Association.

Cuenca, A. (Ed.). (2012). *Supervising student teachers: Issues, perspectives and future directions*. Rotterdam: Sense.

Darling-Hammond, L. (2009, February). *Teacher education and the American future*. Charles W. Hunt Lecture. Presented at the annual meeting of the American Association of Colleges for Teacher Education, Chicago, IL.

Deer, C. (2008). Doxa. In M. Grenfell (Ed.), *Pierre Bourdieu: Key concepts* (pp. 119–130). Stocksfield: Acumen.

Dimitriadis, G., & Kamberelis, G. (2006). *Theory for education*. New York, NY: Routledge.

Falkenberg, T., & Smits, H. (Eds.). (2010). *Field experiences in the context of reform of Canadian teacher education programs*. Winnipeg, MB: Faculty of Education of the University of Manitoba.

Ferguson, J., & Lindo, L. (2013). Practicum PLUS: An alternative design for pre-service teacher engagement. *Education Canada, 53*, 23–25.

Garrett, H. (2012). Rethinking the spaces of supervision: Psychoanalytic considerations. In A. Cuenca (Ed.), *Supervising student teachers: Issues, perspectives and future directions* (pp. 157–168). Rotterdam: Sense. doi:10.1007/978-94-6209-095-8

Grenfell, M. (1996). Bourdieu and initial teacher education—A post-structuralist approach. *British Educational Research Journal, 22*, 287–303. http://dx.doi.org/10.1080/0141192960220303

Jaworski, B., & Gellert, U. (2003). Educating new mathematics teachers: Integrating theory and practice, and the roles of practising teachers. In A. Bishop, M. A. Clements, C. Keitel, J. Kilpatrick, & F. K. S. Leung (Eds.), *Second international handbook of mathematics education* (Part Two, pp. 829–875). Dordrecht: Kluwer Academic. http://dx.doi.org/10.1007/978-94-010-0273-8

Jaworski, B., & Wood, T. (Eds.). (2008). *The mathematics teacher educator as a developing professional. The international handbook of mathematics teacher education* (Vol. 4). Rotterdam: Sense.

Jenkins, R. (1992). *Pierre Bourdieu*. London: Routledge. http://dx.doi.org/10.4324/9780203317471

Klein, M. (1999). The construction of agency in mathematics teacher education and development programs: A poststructural analysis. *Mathematics Teacher Education and Development, 1*, 84–93.

Lin, N. (2001). *Social capital*. Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511815447

Loughran, J. (2007). Researching teacher education practices: Responding to the challenges, demands, and expectations of self-study. *Journal of Teacher Education, 58*, 12–20. http://dx.doi.org/10.1177/0022487106296217

Malderez, A., Hobson, A., Tracey, L., & Kerr, K. (2007). Becoming a student teacher: Core features of the experience. *European Journal of Teacher Education, 30*, 225–248. http://dx.doi.org/10.1080/02619760701486068

Männikkö-Barbutiu, S., & Rorrison, D. (2011). Memorable encounters: Learning narratives from preservice teachers' practicum. In M. Mattsson, T. Eilertsen, & D. Rorrison (Eds.), *A practicum turn in teacher education* (pp. 45–66). Rotterdam: Sense. http://dx.doi.org/10.1007/978-94-6091-711-0

Maton, K. (2003). Pierre Bourdieu and the epistemic conditions of social scientific knowledge. *Space and Culture, 6*, 52–65. http://dx.doi.org/10.1177/1206331202238962

Mattsson, M., Eilertsen, T., & Rorrison, R. (Eds.). (2011). *A practicum turn in teacher education*. Rotterdam: Sense.

Mulholland, V., Nolan, K., & Salm, T. (2010). Disrupting perfect: Rethinking the role of field experiences. In T. Falkenberg & H. Smits (Eds.), *Field experiences in the context of reform of Canadian teacher education programs* (pp. 317–326). Winnipeg, MB: Faculty of Education of the University of Manitoba.

Nash, R. (2002). A realist framework for the sociology of education: Thinking with Bourdieu. *Educational Philosophy and Theory, 34*, 273–288. http://dx.doi.org/10.1111/j.1469-5812.2002.tb00304.x

Nolan, K. (2005). Publish or cherish? Performing a dissertation in/between research spaces. In R. Barnett (Ed.), *Reshaping the university: New relationships between research, scholarship and teaching* (pp. 119–135). Maidenhead: Society for Research into Higher Education/Open University Press.

Nolan, K. (2006, April). A socio-cultural approach to understanding pre-service mathematics teachers' negotiated journeys through theory/practice transitions. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA.

Nolan, K. (2008). Imagine there's no haven: Exploring the desires and dilemmas of a mathematics education researcher. In T. Brown (Ed.), *The psychology of mathematics education: A psychoanalytic displacement* (pp. 159–181). Rotterdam: Sense.

Nolan, K. (2012). Dispositions in the field: Viewing mathematics teacher education through the lens of Bourdieu's social field theory. *Educational Studies in Mathematics, 80*, 201–215. http://dx.doi.org/10.1007/s10649-011-9355-9

Nolan, K. (2014a). Survival of the fit: A Bourdieuian and graph theory network analogy for mathematics teacher education. In P. Liljedahl, C. Nicol, S. Oesterle, & D. Allan (Eds.), *Proceedings of the 38th Conference of the International Group for the Psychology of Mathematics Education and the 36th Conference of the North American Chapter of the Psychology of Mathematics Education* (Vol. 4, pp. 313–320). Vancouver: PME.

Nolan, K. (2014b). Discursive productions of teaching and learning through inquiry: Novice teachers reflect on becoming a teacher and secondary mathematics teacher education. In L. Thomas, (Ed.), *Becoming teacher: Sites for development of Canadian teacher education* (pp. 258–288). Canadian Association for Teacher Education. Retrieved from https://sites.google.com/site/cssecate/fall-working-conference

Nolan, K., & Walshaw, M. (2012). Playing the game: A Bourdieuian perspective of pre-service inquiry teaching. *Teaching Education, 23*, 345–363. http://dx.doi.org/10.1080/10476210.2012.685709

Rawolle, S., & Lingard, B. (2008). The sociology of Pierre Bourdieu and researching education policy. *Journal of Education Policy, 23*, 729–741. http://dx.doi.org/10.1080/02680930802262700

Reynolds, R., Ferguson-Patrick, K., & McCormack, A. (2013). Dancing in the ditches: Reflecting on the capacity of a university/school partnership to clarify the role of a teacher educator. *European Journal of Teacher Education, 36*, 307–319. http://dx.doi.org/10.1080/02619768.2012.755514

Rorrison, D. (2010). Assessment of the practicum in teacher education: Advocating for the student teacher and questioning the gatekeepers. *Educational Studies, 36*, 505–519. http://dx.doi.org/10.1080/03055691003729013

Schoenfeld, A. (2011). *How we think: A theory of goal-oriented decision making and its educational applications*. New York, NY: Routledge.

Towers, J. (2008). Living ethically in the classroom: Enacting and sustaining inquiry. *The Journal of Educational Thought, 42*, 277–292.

Turunen, T., & Tuovila, S. (2012). Mind the gap. Combining theory and practice in a field experience. *Teaching Education, 23*, 115–130. doi:10.1080/10476210.2012.669751

Tzur, R. (2001). Becoming a mathematics teacher educator: Conceptualising the terrain through self-reflective analysis. *Journal of Mathematics Teacher Education, 4*, 259–283. http://dx.doi.org/10.1023/A:1013314009952

Van de Ven, P.-H. (2011). Reflections from a 'Dutch' perspective. In M. Mattsson, T. Eilertsen, & R. Rorrison (Eds.), *A practicum turn in teacher education* (pp. 189–210). Rotterdam: Sense.

Van Zoest, L., & Bohl, J. (2002). The role of reform curricular materials in an internship: The case of Alice and Gregory. *Journal of Mathematics Teacher Education, 5*, 265–288. http://dx.doi.org/10.1023/A:1019816329185

Walshaw, M. (2007). *Working with Foucault in education*. Rotterdam: Sense.

Walshaw, M. (2008). Developing theory to explain learning to teach. In T. Brown (Ed.), *The psychology of mathematics education: A psychoanalytic displacement* (pp. 119–137). Rotterdam: Sense.

Walshaw, M. (2010). Learning to teach: Powerful practices at work during the practicum. In M. Walshaw (Ed.), *Unpacking pedagogy: New perspectives for mathematics classrooms* (pp. 109–128). Charlotte, NC: Information Age Publishing.

Warde, A. (2004). *Practice and field: Revising Bourdieusian concepts* (Centre for Research on Innovation and Competition (CRIC) Discussion Paper No. 65). Manchester: University of Manchester.

Williams, J. (2011). Teachers telling tales: The narrative mediation of professional identity. *Research in Mathematics Education, 13*, 131–142. http://dx.doi.org/10.1080/14794802.2011.585825

Zaslavsky, O., & Leikin, R. (2004). Professional development of mathematics teacher educators: Growth through practice. *Journal of Mathematics Teacher Education, 7*, 5–32. http://dx.doi.org/10.1023/B:JMTE.0000009971.13834.e1

Zeichner, K. (2009). *Teacher education and the struggle for social justice*. New York, NY: Routledge.

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education, 61*, 89–99. http://dx.doi.org/10.1177/0022487109347671