

On noticing (and) the theory-practice nexus in mathematics teacher education: Conceptualising new Bourdieuan fields of social practice in field experience

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Through a teacher educator's study of her own practice as a faculty advisor (university supervisor), this paper focuses on studying theory-practice transitions with respect to mathematics pre-service teacher field experience. The purpose of the research study was to disrupt traditional discourses on these theory-practice transitions by reconceptualising the role of the faculty advisor through the development of a Teacher-Intern-Faculty Advisor (TIFA) Internship Learning Community. Drawing on Bourdieu's social field theory, this paper establishes the TIFA community as a productive space of collaboration and dialogue on the process of becoming a mathematics teacher. The paper proposes that this productive space functions as a new Bourdieuan field which rests in the theory-practice nexus and holds promise for deconstructing the scripts of fields in pre-service teacher education.

Keywords · pre-service teachers · field experience · mathematics teacher educator · Bourdieu · self-study

Introduction

In teacher education programs, the field (or practicum) experience often highlights the lack of connection between 'theory' (in university) and 'practice' (in school classrooms). As noted in Anthony, Cooke, and Muir (2016), while it is significant for mathematics teacher education to understand how pre-service teachers negotiate theory-practice transitions, it is also highly significant to explore and understand the practices of mathematics teacher educators with regard to these transitions. Indeed, such a focus is critical since the practices of teacher educators are positioned at the nexus of theory-practice transitions. In my research with secondary pre-service mathematics teachers, I focus on the theory-practice nexus by conducting self-study research into my role as a faculty advisor (university supervisor) during teacher education field experience. The purpose of the research study informing this paper was to reconceptualise my role as a faculty advisor as I sought to disrupt traditional discourses on these theory-practice transitions through the development of a Teacher-Intern-Faculty Advisor (TIFA) Internship Learning Community. Hence, the issue being addressed in this paper is that of theory-practice transitions with respect to pre-service teacher field experience.

In the paper, I build on previous research (Nolan, 2010; Nolan & Walshaw, 2012) which draws on Bourdieu's social field theory to propose two fields of practice in relation to field experience: that of school mathematics classrooms (F1) and teacher education courses (F2). In that research, I show how the 'scripts' (the regulated, taken-for-granted practices) of F1 form a network of relations which prove challenging to disrupt in F2. Here, I extend that F1/F2 field conceptualisation into a third Bourdieuan field, F3, proposing that F3 rests in the theory-

practice nexus of F1 and F2 and holds promise for deconstructing the scripts of fields in pre-service teacher transitions between F1 and F2 in the field of field experience.

Background Literature

Teacher education research frequently draws attention to claims that the practice-based (field) experiences of teacher education are viewed by pre-service teachers as the most important part of their program and the most significant influence on be(com)ing a teacher (Britzman, 2003; Malderez, Hobson, Tracey, & Kerr, 2007). Yet, with such value placed on field experience, it is puzzling that so few teacher education programs are prepared to examine seriously "whether the 19th-century apprentice model is still relevant" (Britzman, 2000, p. 200). 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). In the specific context of mathematics teacher education, Brown (2008) suggests that, in fact, the practicum is mostly about compliance and regulation, with minimal transfer from the university teacher education program to the practice of schools.

Mathematics teacher education research points to the continuing need to study theory-practice transitions, suggesting that there is a prevalent disconnect between university courses and school-based practicum (Bergsten & Grevholm, 2008; Malderez, et al., 2007). The research, however, cautions against focusing the content of teacher education programs primarily on the practical (technical) side of this theory-practice binary. In fact, Wasserman and Ham (2013) report that "strong beginning mathematics teachers voiced benefitting from both theory and practice" (p. 90), making a strong case for emphasising a strategic blend of, and transitioning between, both theory and practice in the education of new teachers. In Nolan (2012), I draw on Bourdieu's social field theory to study theory-practice transitions of pre-service mathematics teachers, highlighting the need to negotiate conflicting habitus-field fits with respect to innovative and reform-based pedagogical practices.

To address perceived theory-practice disconnects in teacher education, research proposes models for field experience based in close university-school collaborative approaches (Reynolds, Ferguson-Patrick, & McCormack, 2013), professional learning communities (Beck & Kosnik, 2006; Ferguson & Lindo, 2013), third spaces (Garrett, 2012; Williams, 2014; Zeichner, 2010), and third culture (Cochran-Smith & Lytle, 1999), just to name a few. With respect to 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). The self-study research informing this paper reflects a response to this call for experimentation in field experience, serving to understand how mathematics teacher educators might work with/for pre-service teachers in negotiating these critical transitions; that is, "to provoke change through a greater understanding of the theory-practice nexus" (Anthony, et al., 2016, p. 319).

Research Methodology & Theoretical Framework(s)

As a methodology, self-study is defined as the intentional and systematic inquiry into one's own practice (Loughran, 2007). Samaras (2002) uses "the word self-study to mean critical examination of one's actions and the context of those actions in order to achieve a more conscious mode of professional activity, in contrast to action based on habit, tradition, and

impulse" (p. xiii). Self-study can be a powerful methodology in teacher education because of its potential to influence pre-service teachers, as well as one's own learning and practices as a teacher educator. By studying my own professional practice as teacher educator and faculty advisor, I am positioned to reflect on the relationships between research, teaching, and learning and to interrogate the discourses shaping my roles and practices (Nolan, 2015).

As discussed in a later section, a professional learning community (known as TIFA) and an *integrated noticing framework* (INF) frame the key activities of the research project and self-study data collection. A different theoretical framework, however, is featured in research data analysis—that of Bourdieu's social field theory. I use the theoretical tools of Bourdieu in my self-study research "to provoke, challenge, and illustrate rather than confirm and settle" (Bullough & Pinnegar, 2001, p. 20). Next, I provide a brief overview of Bourdieu's key theoretical concepts of habitus, field, capital, and network of relations.

Introduction to Bourdieu's social field theory

Bourdieu (1977) defines habitus "as a system of dispositions" (p. 214), where disposition "designates a *way of being*, a *habitual state* (especially of the body) and, in particular, a *predisposition, tendency, propensity, or inclination*" (p. 214). According to Bourdieu, everyday decisions shape, and are shaped by, habitus since it operates at various levels—in one's thoughts, actions, use of language, and in how one embodies experiences of structures and relations. The socially instituted domain or space (or context) in which a network of these structures and relations is found is referred to as a field (Grenfell, 2008). Bourdieu (1990a) posits the existence of many possible fields, all "historically constituted areas of activity with their specific institutions and their own laws of functioning" (p. 87). He refers to these areas of activity as "quite peculiar social worlds where the universal is engendered" (Bourdieu, 1998, p. 71).

Drawing on a Bourdieuan framework, I propose two fields of social practice with/in teacher education: that of school mathematics classrooms (F1) and teacher education courses (F2) (Nolan, 2010; Nolan & Walshaw, 2012). My claim is that the dispositions formed and shaped through F1 as a student are durable and, without significant intervention of different habitus and/or different field "rules," F1 remains a good fit as a teacher. That is, "the traditional (legitimate and sanctioned) discourses of the field 'persuade' prospective teachers to take them on as their own as they work toward a comfortable, non-conflicting habitus-field match during their field experience" (Nolan, 2012, p. 206). According to Rawolle and Lingard (2008), "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)" (p. 732) and this alignment can be challenging for teacher educators to disrupt during pre-service teachers' negotiations of theory-practice transitions.

To better understand the interactions between habitus and field, the Bourdieuan concept of capital is key. Each of the agents/actors participating in the social practice of a given field is seen to possess particular resources and/or strategies, referred to as cultural capital. According to Grenfell (2008), cultural capital is a synonym for status (or position) and includes all the resources that help people gain access to and position themselves strategically within fields. Bourdieu (1990b) posits 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" (p. 138). When discussed in the context of teacher education, cultural capital of pre-service (and cooperating) teachers can include, for example, one's level of education, classroom experiences, grades/marks, classroom management skills, comfort with the script or logic of the field (i.e., a good habitus-field match), and so forth.

Bourdieu (1990a) claims that a person's habitus in a social practice field is tightly bound up in and by the network of practices and discourses (relations) within that field. By understanding the dynamic roles of the three key concepts—field, habitus, and capital—and their complex interactions within practice, social field theory illuminates issues of domination and reproduction in education. In drawing on Bourdieu's conceptual tools, this paper highlights the network of relations and social practices that support (and (re)produce) traditional practices in mathematics teacher education field experience and associated university supervision models. Through the TIFA community and INF, the F1/F2 field conceptualization is extended into a third Bourdieuan field, F3, which is a productive space of collaboration and dialogue on the process of becoming a mathematics teacher. In fact, F3 represents a 'third space,' even a "nowhere space" (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. As will be shown in this paper, the third Bourdieuan field, F3 is similar to Grenfell's *nowhere* space, reflecting neither the field of school mathematics classrooms (F1) nor the field of teacher education courses (F2).

Research Context

In my university's four-year undergraduate teacher education program (at a Canadian university), the culminating field experience is a four-month practicum (internship) in schools. Each pre-service teacher (intern) is paired with a mentor (cooperating) teacher in the school and assigned a university supervisor (faculty advisor). The traditional role of the faculty advisor involves visiting, observing and conferencing with each of four interns 3-5 times during this four-month internship. In my years of working as a faculty advisor for secondary mathematics pre-service teachers, this model has proven to be problematic and 'deficient' in several ways. Primarily, I felt that a mentorship relationship between faculty advisor and intern based on only 3-5 visits over four months is not adequate to bring about any substantive learning in/from practice nor to disrupt and challenge the view that teacher education programs merely prepare pre-service teachers for the *real* experience of school classrooms. In other words, my role in this internship model felt token. To move my role beyond tokenism in the field (Nolan, 2015), I initiated a self-study research project to design and facilitate a new model for secondary mathematics teacher education field experience and supervision, within which I could explore critically and reconceptualise my role as a faculty advisor. I experimented with models over several years until arriving at my Teacher-Intern-Faculty Advisor (TIFA) Learning Community Professional Development model.

The TIFA learning community model consisted of 3 interns, 3 cooperating teachers, and me, as researcher/faculty advisor each year for four years (2013-2016). I approached the process of reconceptualising my role as a faculty advisor by maintaining a balance between the traditional model for supervision (typically 3-5 school visits) and the new learning community model. That

is, I enacted my role as a faculty advisor by visiting each intern twice in her/his school and then also facilitating four TIFA professional development days at the university (once per month for four months). The TIFA learning community model designed for this research project shares similar characteristics with other models (DeLuca, Bolden, & Chan, 2017; Schuck, Aubusson, Kearney, & Burden, 2013); namely, a focus on professional growth through investigation and collaboration which includes the elements of trust, mutual engagement, diversity of expertise, identified problems of practice, and a shared aim of advancing knowledge of pedagogical innovation. Along with these characteristics, the TIFA model is unique in that its professional development structure integrates several processes, or components: a modified approach to lesson study, the video recording and editing of classroom teaching episodes, and a video analysis process based in the *discipline of noticing* (Mason, 2002). I refer to this professional development structure as an *Integrated Noticing Framework* (INF).

Integrated Noticing Framework (INF)

The INF is grounded in the belief that “it is critical for teachers to first notice what is significant in a classroom interaction, then interpret that event, and then use those interpretations to inform their pedagogical decisions” (van Es & Sherin, 2008, p. 247). The INF professional development process provides an environment for working collaboratively and for sharing experience, expertise, and multiple perspectives on teaching and learning in secondary mathematics classrooms. The individual components of the INF in my TIFA learning community (lesson study, video recording/editing, and noticing) are not entirely dissimilar from those described in other research on mathematics teacher education noticing (see, for example, Cavanagh & McMaster, 2015; Coles, 2013). What is unique about this research project and professional development initiative lies not so much in *what* is done but in *how* the process serves to disrupt normalised practices in the education of new mathematics teachers. The INF is conceptualised and enacted in two parts.

Integrated Noticing Framework, Part I

In the first part, the TIFA learning community members participate in a *modified lesson study* process, the outcome being the creation of a research lesson which is then taught by each of the interns in her/his own school classroom (field experience) setting. The teaching of the lesson is video recorded by the intern and then edited to create a 15-minute video clip which the intern brings to the next TIFA professional development day.

Research points to the valuable ways that both video and lesson study can contribute to pre-service teacher education, such as providing “explicit attention to mathematics and students’ mathematical learning, opportunities to provide and receive critical feedback, and opportunities to critically observe and analyse learning in classrooms” (Widjaja, Vale, Groves, & Doig, 2017, p. 358). In the case of the professional development days and this INF, the lesson study process is referred to as ‘modified’ because a fully developed research lesson (‘script’) is not the goal. Instead, the community adopts the position that it makes the most sense for each cooperating teacher and intern pair to complete the development and refinement of the lesson in their own specific school and classroom contexts, rather than everyone following a uniform script. Thus, our process of lesson study involves identifying, as a group, a specific curriculum outcome that each of the interns will address within the following month (between our professional development days) and then brainstorming inquiry-based approaches appropriate for teaching to that outcome. While we do not, as a group, end our professional development day with a full script, we do leave with a detailed lesson guide which outlines the curriculum outcome (what we hope students will learn), the inquiry-based pedagogical approach to draw

on (what students will be doing to learn that outcome) and relevant strategies for assessment (how the teacher will know if students learned).

This lesson study process is also referred to as modified since the viewing of the lesson by the community is limited to a 15-minute video clip, not the full lesson taught. While the form of video analysis described here is embedded within a specific noticing framework, the use of videos in teacher education and professional development is not novel. Ineson, et al. (2015) review literature on the use of videos in pre-service teacher education, noting research that draws on the use of videos in a range of ways for different purposes—for interaction analysis, modeling, micro-teaching, self-reflection and critique, challenging belief structures, and bridging theory-practice transitions (pp. 47-48). Consistent with Beswick and Muir's (2013) advice to use video excerpts that portray real, local teachers, engaged in teaching in a familiar setting (p. 32), the videos in my internship learning community noticing process feature the interns themselves.

Integrated Noticing Framework, Part II

During each professional development day, the TIFA learning community views the set of three 15-minute intern videos, drawing on the *discipline of noticing* to stimulate discussion and reflection. As Mason (2011) explains, the *discipline of noticing* is a collection of techniques for preparing to notice in the moment; for reflecting on past events to understand what one wants to, or is sensitised to, notice; and for learning to notice in the moment so as to act freshly rather than habitually (p. 48). Drawing on a process similar to Coles (2013), I delineate four distinct phases for the community to follow in my INF noticing process: (1) The intern introduces the video by informing the community of the context for the lesson, but makes an effort not to offer details on the lesson which might shape viewers' noticing. Once the video is introduced, the community is then asked to take individual 'noticing notes' while viewing the video, with no additional instructions for *what* to notice. As facilitator, I do not want to focus participants' noticings in any particular direction but keep the process open to notice what one *is drawn to* notice; that is, allow the noticing process to unfold from the interplay of three aspects of human experience: attention, awareness, and attitude (Mason, 2008, p. 33). (2) Once the video has been viewed, the community members remain in silence for about 2 minutes, organising their noticing notes in order to decide what they want to share with the TIFA community (time is allotted for each participant to share about 5 or 6 key noticings). (3) Moving through the room, each member is asked to give an *account of* what was observed in the video (sharing *what was observed directly*, in detail, avoiding all interpretation at this stage). (4) The final step involves moving through the room once more, inviting each participant to give an *account for* what was observed (this is the interpretive stage where possible meanings or explanations for what was observed in the video are presented and discussed). The four phases are enacted, in turn, for each of the three intern videos, being especially careful to separate phases (3) and (4) so that participant observations may be voiced and heard prior to any interpretations, questions, or discussion being introduced into the process. Such a noticing framework provides opportunities for the post-video discussion (i.e., steps 3 and 4) to focus on what was noticed with respect to teachers teaching and students learning, instead of a deficit focus on the teacher or on the student, as Widjaja, et al. (2017, p. 359) warn against in their discussion of lesson study and video analysis.

Methods and Data Sources

To address the purpose of the research study (that is, to disrupt traditional discourses on theory-practice transitions by reconceptualising the role of the faculty advisor through the

development of a Teacher-Intern-Faculty Advisor (TIFA) Learning Community), data were collected during the TIFA professional development days (2013-2016) by audio-recording noticing and lesson study sessions, as well as group and individual interviews with TIFA interns and cooperating teachers. While there were many audio recordings of noticing and lesson study sessions in addition to interviews, the data analysed for this paper were the individual exit interviews conducted each year with the interns and cooperating teachers. Given that the TIFA community consisted of 3 interns and 3 cooperating teachers each year, this resulted in 24 interviews (of approximately 30 minutes in duration). The exit interviews were conducted by the same person each year (a PhD graduate student research assistant), with questions focusing on understanding participants' experiences of the TIFA community (as either a cooperating teacher or intern), their views on the role of the faculty advisor in negotiating theory-practice transitions and working together during internship (comparing the traditional internship model with this TIFA community model), and if/how the TIFA community had an impact on being/becoming a teacher. My analysis consisted of noting recurring themes across the transcripts arising from participants' responses in relation to the aims of the research, in particular in relation to what participants valued and/or noticed about being involved in a community approach to internship and my role as a faculty advisor. Since I had previously conceptualised the two fields of F1 and F2 through other research, I arrived at the themes for this research by viewing the data through F1 and F2 as lenses. Although I carried out the analysis on my own, I discussed emerging themes with my two graduate student research assistants. The themes are presented in the next section and discussed in relation to how they serve to disrupt the scripts of those two fields, including how the data lead to proposing a third Bourdieuan field. Participant quotes presented are primarily drawn from the last two years of the research community (2015 & 2016), with pseudonyms constructed for both intern (I names) and cooperating (coop) teacher (C names) participants.

Discussion and Findings

Since my commitment in this paper is to discuss my own learning as a teacher educator and faculty advisor in the context of how I am embedded/implicated in the network of relations of social practice fields, I present here the results/insights of my data analysis related specifically to those self-study learnings. I begin by acknowledging that my own dispositions (*habitus*) initially positioned me to notice the *habitus-field* fits and relations that I perceived did not change or become disrupted in any obvious way through the TIFA community. To me, they represent relations that illustrate the durable and complex nature of dispositions (such that my reconceptualised role did not bring about disruption to them). In other words, intern and cooperating teacher participants commented on a number of relations in school classrooms (F1) and teacher education (F2) which feature good *habitus-field* fits for them, specifically in relation to my role as faculty advisor in those fields.

First, several participants referred to field (practicum) experience as access to the *real* classroom; that is, "the real world of teaching" (Ivan, intern, 2015) and "how to actually teach" (Irene, intern, 2016), noting that in university one talks about theory, one talks about practice but, during field experience "you get to see exactly what being a teacher is" (Ian, intern, 2015). Interns and cooperating teachers frequently accused university teacher education classrooms of being UNreal, characterised mainly by talking about, not learning through, teaching practices. The portrayal of university classrooms as reflecting only the theory part of teacher education is challenging to disrupt, especially since it serves to reinforce existing and comfortable *habitus-field* fits for what teacher education does and does not do. In other words, in spite of my efforts

as a teacher educator to provide interactive and inquiry-based mathematics curriculum classes, pre-service teachers continue to view teacher education as the theory part of their education. They still see a significant theory-practice split between the two contexts of university and school, and what works in each.

Second, research confirms that one well-established dimension of teacher education classroom supervision is the normalised technique of sitting in the back of the school classroom to observe and take notes on the intern's teaching practice (Britzman, 2009). In the study informing this paper, several interns and cooperating teachers reinforced the necessity for the faculty advisor to "actually come into your physical classroom" (Ivan, intern, 2015). Even though the participants did not question the value of each TIFA community professional development day, they were adamant that it should not replace school visits by the faculty advisor. To me, this reflects how interns still experience a strong 'fit' with the technical-rational supervision model (a model referred to earlier in this paper as problematic and stuck in a 19th century apprenticeship model (Britzman, 2000)): "I think it's important to have that person in there for that whole period to see what your beginning is, and what your end is like, and what goes on in between, and how your student interaction is" (Ivan, intern, 2015). The relation at work here sustains and reproduces traditional "faculty supervision based on surveillance and 'super' vision techniques" (Nolan, 2015, p. 8).

Finally, my research identifies dominant metaphors drawn on by interns to describe my role as a faculty advisor, including referee, liaison, mediator, "just kind of extra," and "fine tooth comb" (Nolan, 2015). Despite my efforts to create a co-mentoring process through a learning community approach, interns still drew on these metaphors and viewed the faculty advisor as a kind of "side service" to the cooperating teacher. An additional metaphor coming out of the analysis was "photographer" – that is, one intern referred to the fact that "the cooperating teacher gets a more holistic view of how I teach ... the faculty advisor kind of only gets these snapshots here and there" (Irene, intern, 2016).

The three example relations presented above help illustrate how tightly woven together the network of relations within the field of teacher education field experience and supervision can be when grounded in comfortable habitus-field fits. Still, as Bourdieu and Wacquant (1992) note, although habitus is durable it is not eternal and thus one should see habitus as "an open system of dispositions" (p. 133). In other words, "social agents can experience change in fields when there is a disjunction between their habitus and the current conditions within the field" (Thomson, 2008, p. 79). This disjunction, I believe, was apparent through some of what was 'noticed' in the rest of the data. In other words, despite beginning this section by discussing the durable and unchanging nature of some relations in the field of field experience, promise and possibility for change was also visible in the data.

Several new relations were identified in the interview data that not only point to the existence of a third Bourdieuan space (F3), but that also provide evidence to suggest that some faculty advisor relations in F1 and F2, and the transitions between, were disrupted. Overall, four (4) main themes, each characterised by several sub-themes, or relations, were teased out of the interview data for the four years (2013-2016) of the TIFA community research. The four themes, focusing on the promise and possibility for change, are: (1) Disrupting the traditional role of faculty advisor; (2) Conversation, connection and relationship; (3) Opportunities for collaboration; and (4) New perspectives on transitions. Data analysis yielded 18 sub-themes, or relations, under the umbrella of these four themes. Given such an extensive number of relations, this paper presents a detailed discussion of only one (the first) theme, accompanied by a brief overview of the other three themes. I note here that the order or numbering of the themes (1-4 and 1.1-1.8) does not carry particular significance, except that the first theme most explicitly addresses the research aims discussed in this paper (disrupting traditional role of faculty

advisor) with its subthemes being presented in an order which stimulates flow within that theme's discussion.

THEME 1: Disrupting the traditional role of faculty advisor

Focused on the research goal of disrupting the traditional role of the faculty advisor, my analysis of the data resulted in several sub-themes to depict relations in the network of field experience and my role as a faculty advisor. Here, I present the eight (8) relations which characterise the theme of "disrupting the traditional role of the faculty advisor." For each relation, I share participant quotes from the data in the context of how I view the relations as serving to disrupt and/or run counter to the traditional role of the faculty advisor (abbreviated FA in the remainder of this section).

1.1 "Involved ahead of time": On the value of pre-conferencing in advance of visit

One adaptation made for reconceptualising my role was to conduct a pre-conferencing session with the intern on her/his lesson, a few days in advance of my visit to the school. For this advance pre-conferencing, I requested that the intern send me his/her lesson 3 days in advance of my school visit. I would review it and then we would Skype together to discuss the lesson, so that I might offer feedback and critique. Following this, the intern would make decisions regarding how to revise the lesson and I would observe the revised lesson being taught when I visited the school a few days later. This approach was well-regarded by both interns and cooperating teachers.

Ilsa (intern, 2015) stated: "So, pre-conferencing with [the FA] over Skype was nice because we could talk about the lesson plan before she actually saw it [taught], and I could make changes. So, that was good." Similarly, Carla (coop, 2016) commented:

[My intern] sent [the FA] her lesson and then they video conferenced about it. And I think it was really good to have the faculty advisor involved ahead of time, not just showing up that day... to have that bit of pre-exposure to the lesson and give [my intern] some advice ahead of time. And then be able to see what they do with that advice and how to be able to grow from that experience and their feedback.

1.2 More than "two cents worth": On the value of more involvement (part 1)

Along the same lines as the previous sub-theme, but going beyond the pre-conferencing process, Carla (coop, 2016) added that most FAs "just show up that day, give feedback and leave, it's just sort of very open-ended. They're just kind of there. They offer their two cents and then off they go." Ian (intern, 2015) conveyed how he would speak with other interns and realise that their FA is involved quite minimally:

I know, speaking with other interns, you see a faculty advisor maybe once or twice, three times at the most, come in to watch you teach. They don't really have an understanding of the lesson plan before they show up. They just show up and they're there. So, I feel like it gives me, as the intern within this model, more feedback from my faculty advisor as well as feedback from other teachers and students that are a part of the TIFA group. So, personally, for me, it's an enhanced system that allows a little more feedback and also just more professional growth that way.

1.3 "To know what we are doing more": On the value of more involvement (part 2)

When asked about how the role of the FA is different from that seen traditionally, Carol (coop, 2015) responded: "I feel like she has been more involved... not necessarily involved as directing things but being able to know what we are doing more often than someone who's only come out twice and that's the only time that we have seen them or talked to them." Similarly, Cole (coop, 2015) added "as for the faculty advisor... it gives them more opportunity to watch lessons and see what the interns are doing in the classroom, and even see a little more of the

planning side, whereas I don't think most faculty advisors see that part. They just come in as a snapshot and then leave."

1.4 "It's nine set of eyes": On the value of multiple perspectives

The TIFA community disrupts the traditional role of the FA through both the nature and extent of the feedback provided to the intern. When asked about the role of the FA, Isaac (intern, 2016) stated:

... the faculty advisor's somebody that can bring a fresh perspective to things 'cause once you get into a team with two people, then sometimes it's harder to see something that might be good to change or might be good to just do differently or just to see differently. And so that, I think, is the role of the faculty advisor. And the TIFA community's definitely helpful in that 'cause, instead of just one set of eyes, it's nine sets of eyes.

This sub-theme (relation) was consistent across all participants—most of the interns described the highlight of the TIFA community in terms of the value of multiple perspectives providing multiple forms of feedback. For instance, Iris (intern, 2016) shared that even though she hears from other interns that their FA visits more frequently, she described the feedback given through that traditional model as "one-dimensional." Iris offered that, through the TIFA community, they "got a whole bunch of different perspectives because different people in the group noticed totally different things." Similarly, Irene (intern, 2016) spoke about these extra perspectives: "Rather than just having my co-op watch me teach and tell me what she thought afterwards, you get to have a group of seven or eight people who are watching it and you get their ideas."

Cheryl (coop, 2016) stated:

... there [are] nine people watching the video. We're all paying attention to different parts of the video; some are looking at classroom management, some are just looking at the students, and what the room looks like. Some are talking about language, the language that some of the interns are using, and then different ideas, different teaching practices, and stuff. So, just we're all - it's basically watching this [video] nine different times. It seems like we're all catching different pieces of the lesson, and able to make comments on it.

Finally, in terms of multiple perspectives, Chad (coop, 2016) noted: "But mostly the great thing for me is just the ability to sit down, take your time, share some ideas, look at a [lesson] and get eight, nine different perspectives on it, and to say, 'I didn't know this'."

1.5 "A more cohesive unit": On the value of the triad

Before I began this research into alternative models for internship supervision and the role of the FA, the traditional model of serving as an FA was, for me, an experience of feeling like a third wheel— that is, "not valued on the journey that seems, for all intents and purposes, to be mapped out for two: intern and cooperating teacher" (Nolan, 2015, p. 5). In fact, I initiated this enhanced learning community model to alleviate feelings of tokenism within the working triad of cooperating teacher, intern and FA. In the context of this new model, I notice significant disruptions in those token triad feelings. According to one coop, the TIFA model is different from the traditional model in that there are "more conversations going on and I think [the cooperating teachers] are more included ... It just seems [to be] more unison between the three... a more cohesive unit" (Chad, coop, 2016).

1.6 "I really got to know her": On the value of more time together

Cheryl (coop, 2016) described how, even though she didn't really get to talk with me as the FA during my two school visits, the TIFA community provided opportunities to get to know me more: "I found that when I was meeting with her these past [PD] days I really got to know her,

and just what she was expecting from the interns. You just get to know her on a more personal level. It's just more close-knit I guess, [and I] see where her role is in all of this as well."

1.7 "A facilitator of our own exploring": On the value of new metaphors

As noted earlier in this text, dominant metaphors for a FA (for example, mediator, referee, liaison, and photographer) were featured in these data. However, data from the TIFA community also offered new (less peripheral) metaphors as well. For instance, an intriguing new metaphor was offered by Iris (intern, 2016) when she referred to my role as FA as "a facilitator of our own exploring our own growth ... letting us find our own way while offering feedback from a lot of different directions".

1.8 "Less anxious": On the value of less classroom presence

I introduce this sub-theme last because it is quite different from the rest and, in fact, represents a perspective that surprised me. When Irene (intern, 2016) was asked about one of the strengths of the TIFA PD days (in place of extra school visits from me), she indicated that she preferred fewer school visits in my role as FA since she felt "just having that extra presence kind of makes the students behave differently or makes [me] behave differently, so I feel like having a camera just sitting in the corner is a little bit less invasive and makes things go a little bit more naturally." Irene went on to share:

[At first], I was really nervous about having to film a lesson and have all these people watch it but I think that after doing the first one ... like even the first time getting all of that feedback and I found that I was less anxious just not having [the FA] actually in the room but just filming the lesson. It made me feel a lot more comfortable teaching because it's just easier to watch it afterwards rather than having someone watch it in the moment.

As noted at the start of this section, these sub-themes and participant quotes were drawn from the data to illustrate how new relations were constructed – relations which disrupt and/or run counter to my experience of the traditional role of the faculty advisor. While this first theme has been discussed in much greater detail than the next three, it is worth noting that overlaps and intersections between all four themes are also apparent. For example, theme 1, sub-theme 5 discusses the creation of a cohesive triad through "more conversations going on", which connects closely to theme 2 on conversation, connection and relationship, although the emphasis in 1.5 is on the outcome of a cohesive triad, not as much on the process of conversation, as in theme 2.

THEMES 2, 3, and 4

Here, I briefly summarise the other three themes since they not only relate to the research goal of disrupting the role of the faculty advisor, but they also highlight significant new directions for teacher educators with regard to the promise of learning communities for teacher education field experience and supervision models. Themes two and three (*Conversation, connection & relationship* and *Opportunities for collaboration*) are closely connected to one another, but with the latter one more focused on how the community served as a space for productive collaboration, not merely collegiality. Theme 2 might best be encapsulated by Ian (intern, 2016) who claimed "relationships are everything." Also, one cooperating teacher noted how the sharing of new ideas "leads to really good dialogue [and] if you create dialogue between everybody then it builds relationships" (Chad, coop, 2016). While the community conversations helped solidify relationships, a few interns recognised that important other connections were also being made. Ivan (intern, 2015) drew attention to how a community consisting of multiple interns and multiple cooperating teachers represented a major difference from the more traditional model in that one could "share that human connection with people and the struggles that you have

together". His focus on the value of connection extended even beyond internship, stating that the community enhanced his own learning with respect to connecting with teachers throughout one's career, sharing "different struggles or triumphs together".

Five different sub-themes, or relations, were constructed out of the interview data that together characterised the third theme of *Opportunities for collaboration*. The five relations are: the value of viewing and discussing teaching videos together in a collaborative and safe environment; the value of lesson study as a tool for talking about and planning new ways to teach; the value of being in a community with multiple cooperating teachers (learning from each other and how others 'perform' their mentor role); the value of being in a community with multiple interns (learning from and supporting each other); and the value of serving as a TIFA cooperating teacher more than once (three of the cooperating teachers participated in two of the four years of the TIFA community).

The fourth theme (*New perspectives on transitions*) is comprised of three sub-themes or relations, each of which illustrates how the learning community moved participants in directions that stimulated 'new thinking.' By 'new thinking,' I am referring to comments about the value of inquiry teaching (beginning to bridge theory-practice splits by understanding the value of striving for a blend of pedagogies); the value of professional development conducted at the university (providing opportunities to step away from daily school classroom routines); and the value of self-evaluation (interns discussed how much they learned by "seeing themselves teach" in the videos).

Additional Teacher Educator Learning

In addition to the data and discussion presented here, significant learning also came out of asking participants how the TIFA learning community could be improved upon for future years. Suggestions included: everyone viewing all of the videos twice (the first time alone and then in community); adjusting our TIFA days to be shorter (only half-days) but meeting more frequently (some interns found the full day too long to remain focused and engaged); more time devoted to the lesson study process (which, they hoped, would result in more complete lessons being developed); and outcome-based noticing (focusing the noticing process on specific areas or dimensions of the teaching featured in the video). The latter two are briefly elaborated on here.

Lesson study

Lesson study is an effective form of teacher professional development for a number of reasons, not the least of which is to provide teachers with opportunities to participate in communities of inquiry which are devoted to refining and enhancing their repertoire of teaching approaches (Doig & Groves, 2011; Lewis, 2016). Lewis (2016) offers an extensive list of attributes necessary to facilitate effective lesson study in a community of teachers. Among these attributes is that the facilitator must be willing to step back and allow teachers to lead, partly because this contributes to teacher buy-in. In my experience of the learning community, achieving a balance between stepping back, while also pushing forward, was a challenge for me. Many times I felt that participants departed from the professional development day without enough of a 'script' to guide an inquiry-based approach to teaching the lesson. Ilsa's (intern, 2015) advice was "to actually work on building the lesson plans more so ... not necessarily walk away with a script but to have a more established lesson plan, with maybe some activities, would have been nice. We never really had time to get to that".

Outcome-based noticing

Unlike other studies on noticing (Beswick & Muir, 2013; Schack, Fisher, & Wilhelm, 2017), the noticing process in my study was designed to be more 'open,' without specific aims or outcomes. The research data suggest that this openness was viewed as both a strength and a weakness. For instance, Ian (intern, 2015) indicated that he could have used some noticing outcomes—"when we're doing our noticing on our videos, having people try and focus on one area." Yet, at another point in the interview, he welcomed the fact that participants were free to notice what they were most inclined to notice. Allowing one to notice and share what they 'tend to attend to' could be considered a less comprehensive and organised approach to noticing; however, at the same time, it is important to acknowledge the breadth and depth of perspectives when there are seven or so individuals in the room (the multiple pairs of eyes), each bringing their own noticings to the table for each of several videos, during each of several different meetings of the community. Such an extensive process, I believe, ensures that the noticing notes will include more than enough insights for the interns to move forward— that is, to select their *own* outcomes that they consider most critical to focus on to improve and enhance their teaching practice.

The four themes discussed here, along with additional teacher educator learnings, provide evidence to suggest that the more 'traditional' faculty advisor relations in F1 and F2 (and the transitions between) have been disrupted. In addition, I claim that these findings point to the TIFA community as comprising a third Bourdieuan space (F3). The data suggest that F3 rests in the theory-practice nexus and holds promise for deconstructing the scripts of fields in transitions between F1 and F2. Consistent with how fields are conceptualised, F3 has its own relations established through the TIFA community's INF and collaborative processes—some distinct from F1 and F2 and some overlapping/intersecting with F1 and F2. To this end, I propose elsewhere that one way to illustrate the three fields of field experience, and their intersecting relations (or "cross-field effects" (Rawolle & Lingard, 2008)), could be through a Venn diagram representation (Nolan, *forthcoming*).

Significance and Implications of Study

This paper has shown that there is value in viewing field experience as opportunities for teacher educators to dwell in the theory-practice nexus of mathematics teacher education. Capitalising on the notion of a new space of collaboration and dialogue on the processes of being and becoming a mathematics teacher (F3), I was able to study my own positioning, as a faculty advisor, in the network of relations in each field of field experience. The existence of the TIFA community and INF process (F3) make the possibility of interrupting relations in F1 and F2 (in which I am implicated in my role as faculty advisor) much more promising. That is to say, the distinct field, F3, provides a space where I am provided the opportunity to enact my faculty advisor role as a learning community member and facilitator, rather than as a university supervisor (in F1) or a teacher educator and course instructor (in F2).

Over the four years of the research study, the project evolved in both theory and practice, culminating in key research findings in the areas of teacher educator learning, professional learning communities, self-study research methodologies, and theoretical frames of analyses. While the focus of this paper is primarily on teacher educator learnings, in terms of methodological and theoretical advances, analysis of self-study data was framed in a newly created Bourdieu-informed discourse analysis (BIDA) (Nolan, 2016). Through a Bourdieuan self-analysis (Bourdieu, 2008) and the BIDA framework, the research study confirms that the internship learning community constitutes a distinct field (F3), or 'third space', in which

transitions between the field of university teacher education classrooms (F2) and the field of schools (F1) can be problematised and deconstructed.

The discussions in this paper point to significant implications for teacher educators in general. Capitalising on the existence of a third Bourdieuan field—operationalised through the TIFA learning community approach—provides a model for witnessing the power of transforming theory-practice transitions into engaging and reflective pedagogical practice in mathematics classrooms. The TIFA learning community ‘works,’ I believe, because it includes a blend of diverse noticing perspectives— from pre-service teachers, experienced in-service teachers and a teacher educator. Multiple perspectives are valuable in teacher education since “there is a tendency for pre-service teachers to notice that which confirms their existing beliefs” (Beswick & Muir, 2013, p. 30). The learning community approach (and faculty advisor role within) shifts attention away from what might normally be noticed and, instead (in the language of Bourdieu), can create habitus-field disjunctions.

In closing, it is important to note the value of research, such as this project, that draws on self-study research methodology to study teacher educators’ practices. By asking the question of how I, as a faculty advisor, am embedded/implicated in the network of relations within various fields of teacher education (F1, F2, and F3), I avoid studying pre-service teachers’ theory-practice transitions through a deficit approach. Instead, I open spaces in the theory-practice nexus for playing in the fields (and their intersecting spaces) as I (re)imagine a reconceptualised role. That is, this self-study—where I focus on those relations in the social practice fields which can be disrupted through my own practice as a teacher educator and faculty advisor—takes a valuable step in the direction of enhanced engagement in, and impact on, be(com)ing a mathematics teacher.

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