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Virtually There (Again): Internship E-advisors and Professional Learning Communities in Mathematics Teacher Education

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In the research being discussed in this presentation, a faculty advisor (also the researcher) created a digitally-enhanced internship experience, featuring a teacher-intern-faculty advisor (TIFA) learning community. The research goals were two-fold: (1) to understand more about 'best practices' (i.e. meaningful and sustainable practices based in blended learning environments) for teacher education field experiences and becoming a mathematics teacher, and (2) to disrupt traditional notions of teacher education programs as places to 'train' and 'prepare' teachers, with field experience being viewed as the 'supervised' enactment of these preparation techniques.

Introduction

At the 2010 MES meeting, I presented a paper entitled *Virtually there: Introducing the internship e-advisor in mathematics teacher education* (Nolan, 2010). In that presentation, I reported on research into the design and use of desktop video conferencing in the mentoring of secondary mathematics interns (that is, pre-service teachers engaged in their internship, or extended field experience). Overall, the key objective of that project was to develop a working model for creating and sustaining an ongoing, synchronous dialogue between faculty advisors and assigned interns during a four-month internship field experience in schools.

Four years later, that project has evolved: its goals have become more critical, its methodology turned more introspective with the use of self-study data, and its analysis strategies now informed by key concepts of Bourdieu's social field theory. The goal of this presentation is

to provide an overview of how that same research project has evolved and taken on a life of its own in its present form as an internship professional learning community. By creating a multi-dimensional model for the internship (field) experience, the research integrates more reflexive, critical approaches to learning to teach, and teaching to learn, mathematics.

Purpose and Context for Research

Initially (back in 2009), the internship project was developed out of a desire to understand how the use of various technologies could (1) establish a continuum between pre-internship university courses and the internship field experience (studying theory-practice transitions in becoming a mathematics teacher) and, (2) reduce the burden of travel and labour costs associated with supporting faculty advisor travel between the university and schools. That initial internship model focused primarily on highlighting the promises of virtual mentoring in the development of mathematics teachers. The project was built on the premise that using video conferencing technologies would allow (even encourage) sustained contact between the faculty advisor and her interns, thus enhancing the role of the faculty advisor in pre-service teachers' process of becoming (a mathematics teacher). Four years of research and refinement of the model has produced results that could be seen to challenge this premise. At the same time, however, the model and its original goals have evolved into a more collaborative and reflective community of practice.

In the current internship model, the faculty advisor (also the researcher) facilitates a digitally-enhanced internship experience, featuring a professional learning community. The model includes the integration of an enhanced lesson and video study approach to professional development and a digital 'e-advisor' component to intern supervision (Fernandez, 2003; Gorman, Mark, & Nikula, 2010; Nolan, 2011), including the use of multiple technologies such as desktop video conferencing, video flip-cameras, and online collaboration and discussion forums. I refer to this enhanced internship model as the Teacher-Intern-Faculty Advisor (TIFA) Learning Community Professional Development model. The TIFA learning community consists of three (3) interns, their cooperating teachers, and me as

faculty advisor (also researcher and teacher educator). The model requires all participants (interns, cooperating teachers, and faculty advisor) to engage in lesson study experiences, to videotape mathematics lessons, to participate in an online learning community and to meet 4 times (one day each) during the 4-month internship semester for professional development activities (for example, lesson study and video analysis) and, as part of the research component, for interviews and reflective focus groups.

As mentioned, the goals of the research have evolved over the years. Firstly, in the current research project I now seek to understand more about ‘best practices’ (i.e. meaningful and sustainable practices based in blended learning environments) for teacher education field experiences and becoming a mathematics teacher. Secondly, I conduct the research with a goal of disrupting traditional notions of teacher education programs as places to ‘train’ and ‘prepare’ teachers, with field experience being viewed as the ‘supervised’ enactment of these preparation techniques. Data is presently being analysed through the lens of Bourdieu’s social field theory with a goal of critiquing the network of relations and discursive practices that support (and (re)produce) traditional practices in teacher education programs and associated field experiences. This paper and presentation focuses primarily on the first goal, describing the learning community internship model in its present form and how it has evolved over the years from that reported on at MES 2010.

Research Methodologies and Theoretical Framework

The full 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 (see, for example, Bourdieu, 1977). It does so primarily using a self-study methodological framework. By studying my own professional practice, I am in a position to interrogate the discourses shaping my roles and practices as a teacher educator and faculty advisor. In this brief paper, it is not possible to delve into self study data or to draw

on specific concepts of Bourdieu's social field theory to analyze and interpret data (generally, Bourdieu's concepts require substantial background discussion before using them). Instead, I direct the reader to other publications where I outline Bourdieu's social field theory concepts specific to the larger research study (see, for example, Nolan, 2012).

Research Methods and Data

The research project involved multiple and diverse forms of data, focusing on researcher self-study reflections and the reflective contributions of 'others' involved in the project. Data collection for this TIFA internship project included individual and group interviews with interns and cooperating teachers, conducted both in person and through video conferences. The interviews generally took place immediately following each professional development day where we engaged in lesson and video study as a community. For the purposes of both data collection and to enact my role as a faculty advisor, I used multiple technologies to maintain a relationship with the TIFA community between our face-to-face meetings.

The data gathered through individual and group interviews asked interns and cooperating teachers to discuss how (or if) the TIFA learning community had an influence on them, as being and/or becoming teachers. Due to limited space and scope of this paper, I present only two example quotations drawn from the lengthier group interview transcript to represent the significance and influence of this internship learning community model.

I'm finding it's really—like the whole internship process—this is my first time I've had an intern... But I know this is making me a better teacher. And I'm thinking about things I'm saying. And just talking, about teaching and everything. It's been great. It's been awesome. And watching the videotape... It's just nice to watch a video and see what other people are doing in their class. I think this is phenomenal. (Cooperating Teacher 1, Oct. 2013)

Yeah, I agree. I think as becoming a teacher, it's beneficial watching your own videos because, you know, you post conference, you

talk about it and then you go back and see what you just talked about. But it's also extremely beneficial watching other people's videos because there's the classroom management techniques or there's the questioning techniques or just seeing from a different perspective another classroom setting or atmosphere. I think that's extremely beneficial especially as a new teacher to see what classes you could have... (Intern 1, Dec. 2013)

Closing Thoughts

As the model has evolved over the years, I have faced many challenges in designing and implementing this TIFA professional learning community internship model. Despite these challenges, it is becoming apparent that I am realizing the new goals of the project. The model is disrupting traditional notions of teacher education programs as places to 'train' and 'prepare' teachers by establishing an ongoing collaboration between the university (faculty advisor and interns) and the schools (cooperating teachers and interns). The data indicates that the TIFA triads—interns, cooperating teachers and faculty advisor—have embraced the view that the model represents valuable mentoring and professional development for 'being' and 'becoming' teachers. I understand more about 'best practices' (i.e. meaningful and sustainable practices based in blended learning environments) for teacher education field experience and becoming a mathematics teacher as I see the experience changing both the model and my role within it. As I continue to evolve and adapt this model for future TIFA learning communities, I maintain that a critical goal of teacher education "is not to simplify the experience of those learning to teach, but to complicate their experience to the point where they are forced to think, forced to encounter the Other..." (Marble, 2012, p. 29).

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