CHALLENGES OF COMMUNICATION AND PARTICIPATION IN SUPPORTING NEW TEACHERS USING TECHNOLOGY ACROSS SIX RURAL COUNTIES

BY

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DISSERTATION

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Abstract

Beginning teacher induction improves a novice teacher’s practice at an accelerated rate, resulting in a positive impact on student achievement (Ingersoll & Strong, 2011). While mentoring is still the most common component of induction, an increasing pool of evidence indicates a need for a network of others to learn with and to learn from (e.g. Smith & Ingersoll, 2004; Wechsler, Caspary, Humphrey, & Matsko, 2010). Internet-based communications provide a promise of an extended network of professionals, novice and expert, without the worries of distance and time. However, initiatives to develop and implement internet-based initiatives for beginning teachers often find that the reality of implementation does not match the envisioned potential (Clift, Hebert, Cheng, Moore, & Clouse, 2010).

This case study contributed to an understanding of the complex organizational and facilitation issues associated with efforts to integrate technology into a rural induction program that served a six county region. The study sought results that would help reduce a number of gaps in the current research-base. It contributed to a need for increased understanding of induction programs coordinated by educational service agencies that serve new teachers in small, rural schools. In addition, this program’s integration of technology moved beyond the asynchronous, text-based initiatives present in the teacher induction literature to include synchronous audio and video tools.

As the year of study progressed, this induction program experienced a rapid decline in participation, and plans to implement distance mentoring proved to be more challenging than expected. Even so, important lessons were learned about efforts to facilitate technology integration and the coordination of projects that cross multiple district boundaries.
~Dedicated to Tom and Jon~
The pillars that gave me the strength to persist.
~And to my Mom~
My angel watching over me.
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Chapter 1
The Importance of this Study

As educators, we want students to be able to use technology for lifelong learning, for creating and problem solving, and for communicating and collaborating (International Society for Technology in Education, 2007). I question, though, how teachers can help students achieve these standards if they, themselves, are not using technology for these same purposes. As cited by Kumar, Rose, and D’Silva (2008), “According to Carlson and Gadio (2003), teachers’ acceptance of technology is absolutely essential if technology provided to schools is to be used effectively” (p. 605). Educators need to have a sufficient understanding of technology in order to make informed and critical decisions about when a particular tool enhances learning versus when it gets in the way. If we want to improve students’ experiences with technology in schools, we need to first understand their teachers’ experiences when utilizing technology for their own professional development.

The use of internet-based technology has been advocated as a cost-effective means of increasing access to online professional development, access to a broader network of expert teachers and other peers to discuss the art of teaching, and opportunities for learning that can take place anywhere and anytime (Fulton, Yoon, & Lee, 2005; Klecka, Clift, Brady, Arvold, & Quinlan, 2004; U.S. Congress’ Office of Technology Assessment, 1995). Likewise, technology has been promoted as a means to overcome the barriers of geographic isolation and lack of human capital that often limits rural districts’ abilities to provide professional development for their beginning teachers (Hickock, 2004; National Comprehensive Center for Teacher Quality, 2007). However, this pre-supposes access to the resources necessary for implementation including, but not limited to, hardware and software, time, and expertise.
Isolation and limited resources make it difficult to attract and retain quality teachers in rural schools (Hare, 1991; Monk, 2007). Beginning teacher induction makes a difference in the retention of beginning teachers and in the rate that beginning teachers increase their effectiveness (Ingersoll & Strong, 2011; Kardos & Johnson, 2010; Smith & Ingersoll, 2004; Wechsler et al., 2010). However, this requires professional development specific to beginning teacher needs. It requires a pool of teacher leaders to provide mentoring and to model expert classroom instruction, and it requires sufficient time set aside for ongoing learning opportunities through interactions with other educators (Breaux & Wong, 2003; Fulton et al., 2005; Kardos & Johnson, 2010). Comprehensive induction requires fiscal and human capital, and this puts rural schools at a disadvantage.

Many advocate for cooperation across multiple school districts as a possible solution to rural schools’ limited access to resources. By doing so, both financial and human capital resources can, in theory, be pooled for a more cost-effective means of providing professional development and access to expert teachers (Cook, 2003; Hersh, Stroot, & Snyder, 1993; Hickok, 2004; Lowe, 2006; National Comprehensive Center for Teacher Quality, 2007; Sharratt & Sharratt, 1991; Stanley, 2003). Educational service agencies (ESA) have provided an organizational system for facilitating these cross-district collaborations for more than a hundred years. However, coordination across multiple districts brings its own set of unique challenges (Kolbusz-Kosan, Clift, Clementz, & Hebert, 2007; Stephens & Keane, 2005). What happens if the collaborating districts participating in ESA coordinated activities are not collaborating at all or if the pool of expertise across these districts still does not contain the experts that the districts need?
The issues surrounding induction for rural teachers and the use of technology for overcoming barriers of limited time, money, and expertise are complex. Issues include, but are not limited to, school culture and context, participant characteristics and backgrounds, technology affordances and access, implementation strategies, and usage patterns. We need to better understand this complex knot of issues, and how they relate to the differences between the potential and the reality of internet-based communications used for induction. This study builds on prior studies of electronic mentoring, broadening the focus to include new internet-based communication tools, technology used for workshops in addition to e-mentoring, and an intensive look at the offline as well as the online. This study helped to further unravel the knot of complexity, providing insights into how organizational systems and resource considerations interacted with efforts to improve a six county rural region’s induction services by integrating internet-based communication strategies.

**Rural Schools and Induction**

Rural school leaders encounter issues of isolation and limited resources regularly, including their efforts to recruit and retain highly qualified staff. Few teachers choose to live away from metropolitan centers, and this isolation also limits a rural district’s access to high quality professional development providers. While a smaller staff might mean fewer vacancies to fill, this also limits access to human capital when it comes to providing for the wide range of student needs in content area instruction as well as extracurricular opportunities. This means that rural teachers must be more versatile, willing to teach multiple content areas or course preparations, and they must also be willing to take on extracurricular responsibilities. Not only do rural teachers have more responsibilities, but they also receive less compensation than their peers in larger districts. Rural schools are under considerably more pressure to not only keep
high quality teachers in the profession, but to keep them within their own schools and districts (Hare, 1991; Monk, 2007).

Studies indicate that participation in high quality induction activities increases the likelihood that the beginning teacher will remain in the profession for longer and decreases the length of time it takes for the novice to be effective at what they do (Smith & Ingersoll, 2004; Strong, 2006). Not just any induction or mentoring, however, will have an impact on retention or teacher development. High quality or comprehensive programs include multiple supports that move beyond the traditional buddy system model of mentoring (Breaux & Wong, 2003; Strong, 2009). Mentors need to receive extensive training, and comprehensive induction should include additional supports such as ongoing professional development that includes opportunities to observe skilled teachers in practice, access to a network of other teachers, and special considerations given to assigning courses and extracurricular responsibilities to beginning teachers (Breaux & Wong, 2003; Smith & Ingersoll; Wechsler, et al., 2010).

This being said, geographic isolation and limited resources make it difficult for rural schools to provide this level of support. Isolation makes it difficult to expand learning opportunities beyond the school walls or to have sufficient expertise available within the district to provide internal learning opportunities (Hare, 1991; Lowe, 2006; Monk, 2007). In addition, high quality mentoring strives to carefully match beginning teachers with skilled teachers from similar content areas and grade levels (Breaux & Wong, 2003; Moir, Barlin, Gless, & Miles, 2009). Yet, a small staff limits access to educators who share content area or grade level expertise (Klecka, Clift, & Thomas, 2002; Fulton et al., 2005). The likelihood of providing quality mentors with common grade level or content area expertise in a small, rural district is
While the potential for serving rural districts through consortia organizations makes sense, it comes with its own set of issues. Based on biannual data collection and analysis from the Illinois New Teacher Collaborative (INTC), ESAs and other consortia experience a unique set of challenges associated with coordination across multiple districts. Program leaders report feeling that they lack the authority to efficiently obtain needed information from individual districts or to require participation in workshops and other induction activities (Clift et al., 2008; Kolbusz-Kosan et al., 2007). These program coordinators also experience challenges related to participation at professional development and training sessions. Consortia serving rural districts indicate that geographic distance and time provide two common barriers for program coordination. Mentor selection within rural districts also suffers from the lack of human capital in rural districts, even when cooperating across district boundaries. Teacher leaders in these districts are often overextended with other leadership roles within the district and unable to commit additional time and energy to mentor beginning teachers.

Evidenced in both INTC’s work with the state’s grant-funded induction programs and broader literature related to rural schools, context matters and a one-size-fits-all model for induction would be inappropriate (Breaux & Wong, 2003; Clift et al., 2008; Rural School and Community Trust, 2009). Instead, the state’s induction grants allowed models to develop as needed within their own contexts, but always with a focus toward meeting and exceeding the state-approved standards for quality teacher induction. A handful of the grant-funded programs began experimenting with technology to meet beginning teacher needs. One of these programs,
called EdCentral\textsuperscript{1}, provided the focus for this study as this multi-district induction program integrated videoconferencing and web-meeting opportunities as a means of confronting rural school challenges like those described above.

**Potential of Technology**

Many have advocated for the use of technology as a means of overcoming challenges associated with rural schools and consortia (Klecka, Clift, et al., 2004; Fulton et al., 2005), and some have followed through with implementation. The statewide work of INTC and my dissertation interests grew out of an earlier, regional initiative called the Novice Teacher Support Project (NTSP) where discussion forums provided an online space for the e-mentoring of mostly-rural teachers across multiple counties. As a co-author of a recent review of literature about internet-based efforts to implement online mentoring and professional learning for beginning teachers, we found that all of these initiatives used discussion forums or email lists and that most of them struggled with issues related to participation (Clift, Hebert, Cheng, et al., 2010). Initiatives with optional participation struggled the most with building a critical mass of users, and many initiatives floundered to persist after the initial funding sources disappeared. While the small pool of literature available on this topic provided multiple examples of intended outcomes not being met, studies have not yet set out to determine why. Could offline activities or contexts be impacting levels of participation in unexpected ways? Are beginning teachers’ needs being met from other sources so that online supports are unnecessary?

While research regarding synchronous use of videoconferencing and web-meeting platforms did not exist in the beginning teacher induction literature, a few publications indicate that preservice educators have been experimenting with videoconferencing for student teacher

\textsuperscript{1} Names of people, organizations, and locations have been changed to protect the identity of the study’s participants
supervision (Falconer & Lignugaris/Kraft, 2002; Fry, 2006; Rock, Gregg, Gable, & Zigmond, 2009). These studies have primarily occurred in rural states where faculty members are challenged by distance and time in order to observe their students in the classroom. In addition, these efforts are primarily occurring in the field of special education. These empirical studies also noted challenges related to participation. Issues of participation are not unique to these technology and induction initiatives. Online networks struggle to build a critical mass of participants regularly (Barab, MacKinster, Moore, Cunningham, & ILF Design Team, 2001; Schlager & Fusco, 2003). Time often surfaces as a reason for non-participation as does access to resources such as funding, equipment, or expertise (Barab et al.; Clift, Hebert, Cheng, et al., 2010; Fry, 2006; Renninger & Shumar, 2002). We need to better understand the relationships between online and offline issues.

**Promises versus Reality**

Leaders of internet-based initiatives are understandably excited about the potential of what the technology has to offer, but they often end up discouraged when their initial efforts do not meet their expectations and hopes. This issue of technology usage not meeting the original intentions or expectations is not a new concept. This is about the process adopting an innovation (Bruce, 1993; Eglash, 2004; Rogers, 2003). Ultimately when a new technology is introduced into an established social system, a number of outcomes are possible. For example, the technology could be accepted and integrated into the social system as it was intended, it could be rejected, or the technology could be changed or used in a different way than the designers intended. The process of adoption is one of negotiation between the technology and the social system, and this takes time.
Fullan (2009), educational change theorist, would agree. Change takes time, and it is a process of ongoing negotiation. Systemic change requires coherence across all stakeholders involved, and they need to share a common purpose and understanding of the process of change. Negotiating this purpose and understanding requires an “understanding of what reality is from the point of view of people within the role” (Fullan, 2009, p. 55). Attempts to integrate technology into an induction program, as with the implementation of any initiative, is situated in a social system and is situated in the lives of those touched by the initiative (Bruce, 1993; Fullan; Drayton, Obuchowski, & Falk, 2009; Gurstein, 2003). Context matters. Individuals matter. Understanding how an initiative fits into or is negotiated by the context, the society, and the individuals informs the change process.

**Framing the Study**

The purpose of this case study was to gain an understanding of what it was like to be a part of EdCentral’s induction program during this time when program leaders were integrating technology into the supports provided for beginning teachers. This study documented the iterative and cyclical process of programmatic planning, implementation, participation, and reflection. Attention was given to the offline as well as the online experiences of participants.

The integration of technology into an induction program requires a new mindset and vision of how to meet the needs of induction participants. In EdCentral’s case, the leaders envisioned professional development workshops that occurred at a scheduled time but could be attended from any location with a high-speed internet connection. In addition, they dreamed of a new teacher receiving feedback from a veteran teacher who was able to observe this lesson from three counties away using videoconferencing technology.
We know that change is hard, it is contextual, and it is complex. EdCentral’s experiences were no different. The understanding gained over the course of this study unraveled some of the complexity and challenge associated with this particular change process--where limited resources provided both the catalyst and a primary hindrance for EdCentral’s initiatives; where communication systems and relationships proved just as relevant to participation as technology expertise; and where the coordinator wrestled with being a novice while simultaneously being the leader and the voice of experience during EdCentral activities.

The next chapter provides a review of literature relevant to this study, providing both the framework of prior knowledge that this study was built upon and the gaps in knowledge that this study aimed to address. The third chapter provides a detailed description of the case and the methods I used to gain an understanding of what it was like to be involved with EdCentral during this time period. In Chapter 4, I report my findings from the combination of observation, interview and survey data that I collected and analyzed during the 2010-2011 school year. Finally, in Chapter 5, I summarize lessons learned from this study and the implications these lessons have for practitioners, policy-makers, and researchers.
Chapter 2
Understanding the Foundation

The developmental process of learning to teach occurs throughout a teacher’s career, varying in intensity at different points along this continuum (DuFour, DuFour, Eaker, & Karhanek, 2004; Feinam-Nemser, 2001; Fullan, 2007; Learning Forward, 2011). The first years of a teacher’s career are some of the toughest to navigate, and yet schools have traditionally left them to figure out the art of teaching on their own. Quality induction programs provide for beginning teachers’ “legitimate learning needs that cannot be grasped in advance or outside the contexts of teaching” (Feiman-Nemser, 2003, p. 26). When implemented well, these programs can accelerate teacher development and increase the likelihood that a teacher will choose to remain in the profession (Ingersoll & Strong, 2011).

Finding the resources necessary for providing quality induction can be particularly challenging in rural school districts (DeYoung, 1987; National Comprehensive Center for Teacher Quality, 2007). Rural school advocates recommend cross-district cooperation when it comes to providing teacher induction in rural settings. However, the pool of research regarding multi-district coordination of induction is nearly non-existent. Another recommended solution to rural schools’ challenges of teacher development is the use of internet-based technologies (Hickock, 2004; National Comprehensive Center for Teacher Quality, 2007). In 1995, the U.S. Congress’ Office of Technology Assessment report, *Teachers and Technology: Making the Connection*, stated,

Electronic networks can provide a safety net for communication, knowledge, and experience for student teachers in the field as well as new teachers launching their
careers. The loneliness and anxiety of the first teaching experiences can be mitigated through contact with professors and peers via electronic networks. (p. 166)

Two decades later, documented evidence of internet-based communications for beginning teacher induction is gradually increasing, but the field of research in this area is still in its infancy. This chapter provides a review of literature related to beginning teacher needs and the impact of induction, the uniqueness of rural school settings and providing services across multiple school districts, and the promises and pitfalls of adopting internet-based communications, particularly as a component of induction. Based on what we know and what we have yet to learn, a conceptual framework for this study emerged.

Beginning Teacher Induction

What is induction? For the purposes of this study, induction is the process of smoothing the transition “from their role as a preservice ‘student of teaching’ to their new role as a ‘teacher of students’” (Smith & Ingersoll, 2004, p. 683). This transitional phase begins with the hiring process and is usually defined as the first one to three years of classroom experience (Breaux & Wong, 2003; Strong, 2009). Induction strategies cover a wide range of possibilities including orientations, training workshops specific to novice teacher needs, mentoring, observations of other experienced teachers, study groups and learning community opportunities, and even working condition decisions such as administrator support and assigning novices to smaller and easier to manage classes (Breaux & Wong; Moir et al., 2009; Strong, 2009). Induction processes vary immensely with some offering orientation sessions to impart district and school policies and procedures, some assigning beginning teachers to a buddy down the hall who can answer questions they might have, and others offering a comprehensive process including all of the above strategies and more.
The terms induction and mentoring are often used synonymously, but this is inaccurate. Mentoring is only one of many strategies recommended for teacher induction (Breaux & Wong, 2003; Fulton et al., 2005; Smith & Ingersoll, 2004; Strong, 2009). Mentoring is the process of an experienced individual teaching or advising a novice about the essential skills and knowledge necessary for a job or task (Strong, 2009). Teacher mentoring comes in many forms that fall along a continuum of formality where some mentors have been carefully selected, trained and assessed in mentoring procedures and skills prior to being carefully matched to a novice; while at the other end of the continuum, mentoring relationships can naturally emerge between a novice and an experienced teacher.

Many advocate for mentoring as the backbone of induction for beginning teachers (Moir et al., 2009; Smith & Ingersoll, 2004), but some strongly oppose this view.

Mentoring is likely not the silver bullet that schools, districts, or states often hope it will be. Researchers who study mentoring caution against assuming that the new teachers’ induction needs at the school site will be fully met if only they are assigned experienced teacher mentors. (Kardos & Johnson, 2010, p. 26)

The authors of a 2005 report for the National Commission on Teaching and America’s Future (NCTAF) wrote, “Unless we move beyond the traditional one-to-one mentoring model, we will continue to reinforce the industrial-era practice of stand-alone teaching in isolated classrooms” (Fulton et al., 2005, p. 1). The authors provided two reasons behind this argument against traditional induction models that focus primarily on one-to-one mentoring. First, they argued that mentoring is often poorly executed with mentors selected and assigned to novices haphazardly, mentors receiving little to no training, and insufficient time provided for mentors and novices to interact. In some cases, particularly in rural and urban schools, finding sufficient
experienced teacher leaders to provide one-to-one mentoring is an insurmountable challenge (Fulton et al., 2005; Hare, 1991; National Comprehensive Center for Teacher Quality, 2007;). Advocates for the mentoring component of induction and researchers agree with NCTAF in this respect; the quality of the mentoring matters (Feiman-Nemser, 2001; Moir et al., 2005; Strong, 2009; Wechsler et al., 2010).

The second reason NCTAF gave for moving away from this mentoring-focused model of induction had more to do with changing the culture of education from an egg-carton, close-your-door-and-do-your-own-thing, isolationist culture of teaching to one of ongoing opportunities to learn from and with colleagues of all experience levels; a public-practice, learning community culture. Ultimately, learning occurs best through interactions with others, particularly when situated in the lived experiences and practices of the profession.

NCTAF’s persuasive argument is strongly grounded in learning and change theory. Lave and Wenger’s (1991) situated learning theory proposed that everyday design and knowledge building occur naturally through participation with others within community of practice (CoP). The development of one’s identity occurs through interactions with others who share common interests and through observation of practice. The CoP determines what constitutes knowledge in that field, and the practices of individuals within the community evolve based on the knowledge gained and generated from within that group. In addition, educational change theorist, Fullan (2009), argued that a learning community culture in schools provides one of the primary components necessary for meaningful educational change. To effectively produce meaningful change, he argued, this community and all relevant stakeholders must share a common moral purpose that drives decision-making across all tiers of the organization. This is about a cultural shift within an entire school and not about a scheduled professional development activity that
teachers participate in once-a-week, and then return to their closed-door classrooms (DuFour, DuFour, & Eaker, 2009; Fullan, 2007).

Regardless of whether one considers mentoring to be a primary component of induction or not, there exists a commonly agreed to set of goals for induction. However, individual programs vary in terms of goal prioritization. One purpose for induction programs is to acculturate the beginning teacher to the local school and district philosophies, policies, and procedures (Breaux & Wong, 2003; Strong, 2009). Another goal of an induction program is to retain qualified teachers in the school, the district, and the profession. This goal has its basis in research studies indicating that between 30% and 50% of beginning teachers leave the profession within their first five years (Ingersoll & Kralik, 2004; Ingersoll & Smith, 2003; NCTAF, 1997). The third goal accompanies the overall intention of smoothing the transition into the profession and has links to research regarding early teacher concerns and reasons for leaving the profession. Induction strives to provide instructional and psychological support for beginning teachers (Fuller, 1969; Gold, 1996). Ultimately, this goal of support is intended to prevent early teacher burnout that can result from concerns about adequacy and unmet social-emotional needs such as belonging (Breaux & Wong, 2003; Fuller, 1969; Gold, 1996; Knowles, 1980).

Many argued that while the goals of retention and support are important, the most important goal is to increase beginning teachers’ knowledge and skills to move them toward effectiveness more rapidly than their peers who receive no formal induction (Feiman-Nemser, 2001; Moir, et al., 2009; Strong, 2009). Teacher quality is commonly accepted as one of the most important aspects impacting student learning (Cochran-Smith & Fries, 2005), and moving teachers beyond survival toward focusing on instruction and student learning is believed to lead toward the gold-standard of induction and all other educational initiatives—improved student
outcomes (Moir et al, 2009; NCTAF, 1997; Strong, 2009). Believed, however, is the operable term as researchers are just beginning to define methods for measuring the impact of induction on teacher effectiveness and student achievement (Strong, 2011).

**Induction quality and impact.** Despite 20 years of expert discussions regarding induction, in 1996, NCTAF declared inadequate induction opportunities for beginning teachers to be one of the primary barriers to improving education in the United States. Between 1974 and 2000, the number of beginning teachers reporting participation in induction experiences climbed from 17% to 83% (Alliance for Excellent Education, 2005; Smith & Ingersoll, 2004). In 2005, only one-third of the nation’s states had instituted policies related to induction (Fulton et al., 2005). Three years later, evidence of induction-related state policies had increased to 88% (National Comprehensive Center for Teacher Quality, 2008). Despite evidence of increased induction opportunities, the quality and impact of induction offerings requires consideration.

**Impact on retention.** Some studies indicate that participation in high quality and comprehensive induction increases the likelihood that the beginning teacher will remain in the profession for longer (Smith & Ingersoll, 2004; Strong, 2006). Smith and Ingersoll, using data from the 1999-2000 Schools and Staffing Survey and the Teacher Follow-up Survey, conducted a multinomial logistic regression to determine whether different types of induction supports would predict a beginning teacher’s likelihood to leave the profession within the first 5 years of teaching. They found that while new teachers who participated in basic induction activities (a mentor and supportive communication with a supervisor) demonstrated no significant difference in predicted attrition rates (39%), those who participated in “basic induction + collaboration” (adding time to meet with colleagues and a professional seminar) reflected an attrition rate significantly lower (27%). Less than 1% of new teachers actually participated in “basic induction
+ collaboration + teacher network + extra resources” (adding an external network of professionals and resources such as reduced preparation or an aide) (Smith & Ingersoll, 2004, p. 705). However, teachers who did participate in this “full package” version of induction exhibited an attrition rate of only 18% (Smith & Ingersoll, 2004, p. 705). While this study did not investigate variables related to the quality of mentoring or professional development received by those surveyed, this national data set provided strong evidence in support of comprehensive induction, or induction that included multiple, interlocking support strategies for beginning teachers.

Retention studies tend to fall into two categories: (a) large scale studies that are unable to control for, or gain an understanding of, finer nuances such as who has really left the profession and who is simply taking a short break; and (b) small scale studies that are able to investigate the nuances, but with limitations in the ability to generalize beyond the study’s boundaries (Strong, 2009; Zumwalt & Craig, 2005). In an effort to increase generalizability, a recent randomly controlled experimental study comparing two well-known intensive induction programs with less comprehensive models found no significant differences in attrition rates between the treatment and control groups. This led to the causal conclusion that these two comprehensive induction programs do not result in significantly different retention rates when compared to other less-comprehensive programs (Isenberg et al., 2009). However, a post-experiment correlational analysis using measures of induction intensity and comprehensiveness across all study participants’ experiences, regardless of whether they were assigned to the control or the experimental groups showed significant relationships between teachers’ intentions to remain in the profession and the intensity and comprehensiveness of the induction received.
In a mixed-methods study of grant-funded induction programs in Illinois, researchers found that beginning teacher retention rates were predictable based on survey measures of school context but not predictable based on measures of mentoring intensity, the program’s focus on instruction, or the number of induction activities provided in addition to mentoring (e.g. study groups or opportunities to observe experienced teachers in practice) (Wechsler et al., 2010). While this finding seems contradictory to those described above, these researchers questioned whether retention should even be used as a measure of induction impact during an economic downturn when many are out of work and alternative job-opportunities are rare (Wechsler et al., 2010). It should also be noted that national studies, such as Smith and Ingersoll’s (2004), indicated that early-career attrition rates tend to be greater in low-income, low achieving schools (Fulton et al., 2005; NCTAF, 1997, 2010). While the context factors investigated by Wechsler et al. (2010) did not include student socio-economic status (SES) or average test scores, their finding that school context measures (e.g. availability of resources and administrator support) provided the only predictor of retention contributes to the assertion that context matters.

Decreasing the attrition of beginning teachers impacts the quality of education since experienced teachers have been shown to be more effective than beginning teachers (Johnson & Kardos, 2008). Frequent turnover of beginning teachers within a single school will result in a less experienced staff than schools with higher rates of attrition. Studies have also found that teachers with higher SAT scores or educational attainment tend to leave the profession or move to new schools at a higher rate than their peers, particularly from low-income, low-performing schools (Wirt et al., 2001; Zumwalt & Craig, 2005). While retention alone should not be the only goal of an induction program, in some contexts, retention and teacher quality may be inseparable issues.
Impact on teacher quality. More importantly than retention, induction strives to accelerate the development of beginning teachers, moving them toward effectiveness more rapidly than if they had no induction supports (Breaux & Wong, 2003; Feiman-Nemser, 2001; Ingersoll & Strong, 2011; Strong, 2009). Findings from studies related to induction impacts on teacher practice and on student achievement vary, and the pool of evidence is shallow at best (Lopez, Lash, Schaffner, Shields, & Wagner, 2004; Strong, 2009; Wang, Odell, & Schwille, 2008). Reviews of empirical studies regarding the effects of induction on beginning teachers’ practices and on student achievement describe the challenges inherent in trying to answer these questions. Most studies investigating teacher learning as a result of induction utilize self-report beginning teacher surveys and interviews or observations of mentor practices with theoretical assumptions regarding the potential for teacher learning (Lopez et al. 2004; Wang et al., 2008).

Ingersoll and Strong (2011) located only nine empirical studies that met their criteria for focusing on the impact of induction on teacher learning or student achievement in conjunction with methodologies that included comparison. Of these nine, five of them utilized classroom observations. None of these studies, however, compared a teacher induction group to a similar group that received no induction supports. Instead, the comparisons were between different models of support to determine if one model was better than another. In addition, only one of these studies utilized random assignment to treatment groups. While these studies include evidence of impact on teacher development and student achievement, firm generalizations of impact are not yet possible.

One of the studies represented in the Ingersoll and Strong’s (2011) review of the research was the U.S. Department of Education funded study conducted by the Mathematica Policy Research (MPR) firm. The study was a randomized controlled study of the impacts of
comprehensive teacher induction (Isenberg et al., 2009). Described briefly in the above discussion of retention, this study randomly assigned 17 low-income school districts to a treatment group and a control group. The treatment districts implemented one of two comprehensive and established induction models, the New Teacher Center’s model or the Educational Testing Service’s model. The control group’s districts implemented their own induction programs that MPR had determined as non-comprehensive models. After the first year of the study, no significant between-group differences surfaced in the areas of retention, classroom practices, student achievement, or the demographics of the teaching staff. The only statistically significant differences were found in the amounts of induction services received. Similar findings occurred in year two with the only difference being that the control group reported significantly greater amounts of induction services than the treatment groups that implemented the treatment for only one year. However, in the third year of the study, researchers did find significant differences in student achievement between students of teachers receiving the comprehensive induction treatment as compared to students of the teachers receiving the district’s induction program.

Many criticisms have been leveled against MPR’s study, but the most prominent was their methodological decision to select control districts who implemented their prevailing induction program as opposed to selecting districts with no formal induction program or with informal induction supports (Ingersoll & Strong, 2011). Noticing that some control group subjects appeared to receive equivalent or more induction services than those in the treatment groups, the researchers conducted correlation analyses to determine whether relationships surfaced based on induction inputs regardless of the control or treatment group assignments. Not only did this analysis indicate relationships between induction inputs and retention outcomes, but
they also found significant relationships between students’ mathematics scores and the length of
time that the beginning teachers had a mentor.

Returning to the study of the SBE grant-funded programs, this study also investigated
induction inputs and impacts on teacher change (Wechsler et al., 2010). Using self-report survey
items from mentors and beginning teachers, they combined multiple survey items to represent a
measure of school context (e.g. principal support, access to materials, etc), a measure of
mentoring intensity (e.g. number of times the beginning teacher was observed, number of hours
interacting, etc), a measure of instructional focus (e.g. interactions involving analysis of student
work, development of a professional growth plan, etc), and a measure of comprehensiveness
(e.g. participation in activities beyond mentoring and professional development workshops such
as study group participation or opportunities to observe experienced teachers in practice). Using
regression techniques, researchers found that only the school context measure significantly and
positively predicted retention, but all other measures significantly and positively predicted
beginning teachers’ self-report ratings of professional growth and self-efficacy. Another
important finding based on their small sample of program case studies, researchers noted that
context measures not only varied between schools, but within schools as well (Wechsler et al.,
2010, p. 18).

**Induction discussion.** Induction research has yet to provide any definitive answers
regarding what works and what does not. The empirical evidence and research methodologies are
beginning to point toward causal links between induction and retention of beginning teachers,
teacher change, or student achievement (Ingersoll & Strong, 2011). At this point in time, the
experts in this field concur (and have some supporting evidence) that comprehensive induction
makes a greater difference than basic or no induction. Comprehensive induction moves beyond
mentoring to include learning through interactions with other experienced and inexperienced teachers (Breaux & Wang, 2003; Isenberger et al., 2009; Lave & Wenger, 1991; Smith & Ingersoll, 2004; Wechsler et al., 2010). Experts also agreed that induction focused on improving instruction and on individual teachers’ needs will have a greater impact on teacher quality than induction focused only on emotional and survival support (Feiman-Nemser, 2001; Fullan, 2009; Knowles, 1980; Moir et al., 2009; Strong, 2009; Wang et al., 2008; Wechsler et al., 2010).

Finally, what appears most evident from these research findings and study limitations is the importance of context as it relates to beginning teacher induction. Context is inclusive of induction components such as access to supportive administrators; working condition decisions focused on smoothing beginning teachers’ transitions such as smaller class sizes or fewer course preparations than their experienced peers; and alignment of induction activities with school initiatives and philosophies (Fullan, 2009; Smith & Ingersoll, 2004; Wang et al., 2008; Wechsler et al., 2010). Context is also related to the school’s climate including collegial relationships, student demographics, and community characteristics (Fulton et al., 2005; NCTAF, 1997, 2010; Strong, 2009; Wechsler et al., 2010; Wirt et al., 2001; Zumwalt & Craig, 2005). Induction impact research currently lacks strong consideration for these complex contextual issues, making impact findings unreliable. In order to better measure impact, we need to better understand the role context plays in the implementation of induction and in the experiences of the beginning teacher.

**Rural School Context and Induction**

**Rural school challenges.** Induction comes with a price tag, and this often drives policymakers’ decisions about whether to implement formal programs. It also drives their need for impact studies. Even though studies indicate that the return-on-investment of beginning teacher induction makes the expense worthwhile, urban and rural schools struggle to find the
resources necessary (Barnes et al., 2007; Fulton et al., 2005; Hickok, 2004). This adds to concerns about induction impact since rural and urban schools tend to be those low-income, low-achieving schools experiencing the greatest challenges when it comes to retaining quality staff.

Using statistics from the NCES Schools and Staffing Survey, Monk (2007) demonstrated that the smallest of the rural districts are at the greatest disadvantage when it comes to providing high quality educators for every student. These schools contained greater proportions of inexperienced teachers, classes taught by teachers without appropriate certification, and teachers with significantly lower basic skills test scores than the national average. A large-scale, U.S. Government Accountability Office (GAO) study of rural school challenges associated with meeting NCLB requirements found that small rural districts were most likely to report that school size and geographic isolation affected their ability to meet the student proficiency and teacher quality requirements (Hickok, 2004). “For example, officials in small rural districts told us [GAO] that limited personnel made it difficult to release teachers and administrators for attending [Department of] Education’s conferences and training” (Hickok, 2004, p. 5).

Hare (1991) argued that rural school administrators were, above all else, challenged by the limited number of applicants available to fill vacancies. Few choose to live in rural settings away from metropolitan centers. Rural school applicants must be willing and able to teach in multiple content areas or to have more course preparations than they would within a larger school. They are usually expected to take on extracurricular responsibilities as well. In addition, these applicants are choosing to do all of this for less compensation than what their peers receive in larger districts (Hare, 1991; Monk, 2007). Hickok’s (2004) NCLB study found that 52% of rural district leaders reported difficulties in offering competitive salaries to teachers, where only
36% of officials in non-rural districts concurred. The issue of a limited pool of applicants becomes magnified when the schools also suffer for challenges of teacher retention.

Funding formulas for schools are determined at the state level. Johnson and Strange (2009) described a rural schools policy phenomenon they called “out of sight, out of mind” (p. 9). This referred to the seven states that house approximately one fourth of the nation’s rural population, but where the presence of a major urban center within that state results in a low statewide percentage of rural students despite a relatively large rural population when compared to other states. This, they argued, results in a greater tendency for policymakers to disregard rural school needs in states with large rural populations. When state funding formulas focus heavily on the urban needs in these states, then the rural districts have a tendency to suffer from an inequitable distribution of funds. Illinois is one of these states. Using national and state statistics to compare rural school related statistics across all 50 states, Illinois ranked ninth from the bottom with regard to its educational policy context (Johnson & Strange, 2009, p. 45). Included in this average ranking was a rural instructional expenditure per pupil average ($4,371) that was ninth lowest in the country and $1,500 less than the overall state average. In addition, Illinois ranked second only to West Virginia for its ratio of instructional to transportation expenditures. This measure most illustrates the fiscal struggles in Illinois rural school districts because state expenditures per student are low statewide, but rural schools are forced to spend a greater proportion of their overall budgets on transportation, leaving less available for students and even less for teacher development.

That being said, studies have also indicated that some teachers are particularly attracted to rural schools despite salary differences (DeYoung, 1987; Hare, 1991; Monk, 2007; Zumwalt & Craig, 2005). Gibbs (2000) described findings from a large-scale 1998 study that rural
teachers, despite lower salary averages reported no less satisfaction with their salaries than did their urban counterparts. In addition, rural teachers were more likely to be satisfied by their working conditions and to feel more influential with regard to district and school policy decisions.

**Induction in rural schools.** Despite the statistics and common references to induction’s importance for urban and rural schools, Johnson and Strange’s (2009) idea of out of sight, out of mind appeared to apply on a larger scale than just the seven states with large, urban centers. An ERIC search for literature regarding induction in rural schools published between 1990 and 2010 resulted in a total of 15 journal entries (three peer-reviewed) plus three reports\(^2\). An identical search of induction in urban schools (replacing “rural” descriptor with “urban”) resulted in 43 journal entries (23 peer-reviewed) plus five books. With the regular call for consideration of contexts, the lack of empirical research in rural schools is troubling. Particularly given that nearly 20% of the nation’s students attend rural schools, more than 40% of these students qualify for free and reduced lunch, and more than 30% do not graduate from high school (Johnson & Strange, 2009).

Of the 18 rural induction resources, four of these were purely commentary, describing what needs to be done to provide support for beginning teachers in rural areas with little or no reference to research as a basis for their arguments (Boss, 2001; Lowe, 2006; Sharratt & Sharratt, 1991; Townsell, 2007). Two-thirds (12 of 18) were specific to a particular program; and of these, only five went beyond program description to include empirical research regarding the program (Fry, 2006; Harris, 2001; Hersh et al., 1996; North Carolina University, 1992; Russell, Gold &

\(^2\) The advanced search of ERIC looked for “rural” in the descriptors and “teacher mentoring” or “beginning teacher induction” within the title, descriptors, or the abstract. All items containing the keywords “urban” or “foreign” were removed. The search parameters were also restricted to “English only” items and those published between 1990 and 2010.
Williams, 1991). All of these empirically studied programs were coordinated out of higher education institutions, and three of them described preservice induction programs for rural teachers as opposed to the early years as the teacher-of-record (Fry, 2006; North Carolina University, 1992; Russell et al., 1991).

Three of the 18 resources were large-scale, survey studies (Duke & Gates, 1990; Hickock, 2004; Kono, 2008). Two assessed the induction experiences within a single, rural state, and the third study focused on rural school needs associated with NCLB compliance where induction was one of multiple recommendations. The latter was a national study sanctioned by the U.S. Department of Education (Hickock, 2004). Given the out of sight, out of mind phenomenon described previously, it should also be noted that 13 of these 18 publications described or assessed induction in rural states where the rural population exceeds the non-rural population in that state.

Empirical or not, the reviewed literature echoed concerns described previously regarding the need to overcome isolation, resource limitations, staffing challenges, and the implications these issues have for beginning teacher induction. Issues related to the lack of human capital when implementing induction often surfaced (Duke & Gates, 1990; Hare, 1991; Harris, 2001; Hickock, 2004; Monk, 2007). Finding sufficient, high-quality mentors who were also good content and grade-level matches for their protégés was difficult. When programs were unable to provide these matches, both the mentors and protégés commented on this as a source of dissatisfaction with the program (Duke & Gates, 1990). Interestingly, the North Dakota Prairie Teachers project that provided money to rural districts to implement induction in a manner appropriate to their contexts reported,
Principals felt that the act of assigning a mentor could erode the sense of community they perceived as the strength of rural schools. Thus, instead of one-to-one mentoring, the Prairie Teachers employed network mentoring, viewing each member of the school faculty as a resource for support of a newcomer. (Harris, 2001, p. 22)

Summarizing across this pool of literature, four reoccurring recommendations emerged. One common recommendation was that preservice teacher education and induction programs should include strategies for gaining an understanding of the surrounding community, as well as strategies for building connections with the community (Boss, 2001; Fry, 2006; Kono, 2008). Teachers who grew up in the communities where they taught and beginning teachers who successfully integrated the community culture into their classroom instruction and social lives tended to experience greater success (Boss, 2001; Harris, 2001). When discussing the Prairie Teachers program in North Dakota, Harris gave this reasoning for the importance of community connections, “Interpersonal faux pas and differences can take on lives of their own in towns so small and isolated that an unfamiliar vehicle is noticed and local people talk with each other every day” (2001, p. 23). Beginning teachers who did not grow up in a rural area were unaccustomed to this type of culture, and they either worked hard to assimilate or, more often than not, left the district. In addition, since rural teachers had a greater tendency than non-rural teachers to return to their own or to similar communities, multiple articles recommended that rural districts institute grow your own programs. This recommendation most often focused on hard to staff positions such as special education, music, math, and science (Boss, 2001; Lowe, 2006; Monk, 2007; National Comprehensive Center for Teacher Quality, 2007).

Limited financial resources and small staffs in rural schools led to recommendations for multi-district collaboration (Cook, 2003; Hersh et al. 1996; Hickok, 2004; Lowe, 2006; National
Comprehensive Center for Teacher Quality, 2007; Sharratt & Sharratt, 1991; Stanley, 2003). Providing professional development to a larger population of educators was found to be more cost effective. Also, expanding the pool of educators beyond district boundaries increased the likelihood of finding appropriate mentor matches for beginning teachers. Similarly, networking opportunities for teachers across multiple districts increases the ability to learn and share with educators who share the same content area or grade level interests. Educational service agencies (ESA) were often recommended as an appropriate entity for coordinating these cross-district collaborations.

Two specific challenges related to this recommendation surfaced during implementation. First, sharing professional development or specialized teachers across multiple districts suffered from distance barriers that required both time and financial resources (Hersh et al., 1996; Hickock, 2004). The second issue surfaced within a statewide study of the cost-effectiveness of ESA provided services as compared to the costs incurred when individual districts provided these services alone (Stanley, 2003). While the researcher consistently found that multi-district cooperation facilitated by ESAs was more cost effective, district cultures accustomed to local control presented an unexpected barrier to the success of these consortia. In studies from the Illinois New Teacher Collaborative (INTC), induction program coordinators of multi-district consortia likewise expressed frustrations related to facilitation across differing district norms and cultures (Kolbusz-Kosan et al., 2007). In introducing their book about ESAs, Stephen’s and Keane (2005) argued, “America’s Educational Service Agencies are unequivocally the least understood and the worst documented component of elementary and secondary education” (p. xv). The authors went on to describe a large gap in educational research about ESA services and impact.
Finally, this pool of rural induction literature often recommended the use of internet-based communications (DeYoung, 1987; Hickock, 2004; Monk, 2007; National Comprehensive Center for Teacher Quality, 2007; Sharratt & Sharratt, 1991). The reasons for increased use of technology were identical to the reasons for increasing multi-district collaborations. Professional development could be provided despite limited access to geographically-near experts in the field, and technology use is more cost-effective than travel. Also, opportunities to network with or be mentored by others with similar interests increases when the geographic barrier is removed from the equation.

**Rural discussion.** Similar to the findings from the reviews of research on the impacts of induction, reliable and valid conclusions about induction in rural schools are unavailable at this point. A major difference, however, exists between these two pools of literature. Where the general induction research suffers from methodological challenges and conflicting empirical findings, research on induction in rural settings suffers from a shortage of empirical study. Rural school advocacy groups often complain about urban-centric policies and the marginalization of rural schools and communities (National Rural Education Advocacy Coalition, 2010; Rural School and Community Trust, 2009), and it appears that educational research may be contributing to this phenomenon in its own way (DeYoung, 1987). Given the amount of outcry for researchers to carefully investigate contextual issues as they relate to induction implementation and outcomes, much work is needed in the area of understanding beginning teacher induction in rural settings.

**Technology and Induction**

Drawing from December’s (n.d.) definition of computer mediated communication, I use the term *internet-based communications* when referring to the process of communication (i.e.
encoding, transmitting, and decoding messages) that uses networked computers and mobile
devices for this exchange of information. This definition encompasses a wide range of
applications including web pages, email, blogs, discussion boards, electronic databases, instant
messaging, and videoconferencing. Many advocate for the use of internet-based communications
as a means of providing beginning teachers, particularly rural teachers, with opportunities to
learn with and from a network of others (Clift, Hebert, Cheng, et al., 2010; Fulton et al., 2005;
Jaffe, Moir, Swanson, & Wheeler, 2006; Klecka et al., 2002; Monk, 2007; National
Comprehensive Center for Teacher Quality, 2007; U.S. Congress’ Office of Technology
Assessment, 1995).

In the Department of Education’s study of rural school needs related to the No Child Left
Behind Act (NCLBA), Hickock (2004) found that rural schools were more likely than non-rural
schools to use distance learning opportunities to increase the learning opportunities for both
students and teachers. However, the use of technology for these purposes was far from
ubiquitous. The study also found that some rural schools faced limitations related to capacity and
unstable internet connections. In addition, even in schools with full capacity and high-speed
connectivity, some district leaders “did not always know how to make best use of available
technology and were unaware of ways in which this technology could be used to meet the
requirements and the goals of NCLBA” (Hickock, 2004, p. 23).

**Internet-based professional development.** “We have found that faith in a pure face-to-
face approach [to professional development] is somewhat misplaced” (Wiske, Perkins, & Spicer,
2006). Wiske and colleagues provided four reasons for this opinion. First, the complexity of
school settings presents challenges for sustaining regular face-to-face contact with program
developers, presenters, and amongst the teacher participants. Second, internet-based professional
development makes the work of participants visible to others for collaboration and joint reflection. Third, it allows for persistent records of communications and materials to be maintained, which are then accessible for later reflection and review. Finally, they argued that participants in internet-based professional development begin to see the benefits of participating with other colleagues in a professional community.

Just as we needed to frame rural teacher induction literature within an understanding of the broader field of teacher induction, the field of internet-based communications literature specific to beginning teacher induction requires a basic understanding of the internet-based professional development literature. This area of study is still relatively new. As a result, finding quality, empirical research can be a challenge. Whitehouse, Breit, McCloskey, Ketelhut, and Dede (2006) found only 40 studies from a pool of over 400 about online, face-to-face, and hybrid professional development that met their criteria for rigorous data collection and analysis methods. In summarizing across these studies, Whitehouse et al. (2006) concluded that meaningful dialogue and desirable thinking skills can develop through internet-based professional development and that internet-based professional development can be reflective, interactive, collaborative, and community building. However, these outcomes did not automatically occur simply by providing the online space and tools (Whitehouse et al., 2006). In summarizing the breadth and depth of research in this field, they found that literature related to the design of these initiatives and to the nature of online interactions were much more prominent than the literature related to the impact on teacher learning, teacher change, and student learning.

A recent meta-analysis of online learning studies across age groups and content areas did attend to issues of impact (Means, Toyama, Murphy, Bakia, & Jones, 2010). Researchers found that neither online learning nor face-to-face learning outperformed the other in terms of effects
on student learning. In addition, this study found that face-to-face instruction that had been enhanced with online activities outperformed purely face-to-face in terms positive effects on student learning. None of these studies, however, measured the effects of purely synchronous online learning, but included only studies of purely asynchronous activities or a combination of asynchronous with synchronous. These findings, while not specifically about online professional development for teachers, could indicate a tendency for greater impact on teacher learning through face-to-face professional development that is supplemented with internet-based activities.

**Internet-based communications and induction.** Literature focused on internet-based communications used for teacher induction purposes echoed many of the general conclusions from the above review of online professional development research. One primary difference, however, was an even smaller pool of research to consider. Through a recent review of available literature related to internet-based efforts to implement online mentoring and professional learning for beginning teachers, the authors (including myself) found only eight distinct initiatives that demonstrated any evidence of data collection and analysis (Clift, Hebert, Cheng, et al., 2010).

When looking across these studies, some general patterns related to the program descriptions emerged. From these eight initiatives, we noted that higher education institutions played key roles in the development and implementation of all of these initiatives. Five of the eight programs targeted graduates from their own institution or worked directly with their professional development school partners (Abbott, 2003; DeWert, Babinski, & Jones, 2003; Friel, 2000; Merseth, 1991; Metiri Group, 2005). In addition, most of these programs were dependent on external funding sources, making sustainability a challenge. Three of the programs
lasted only one to three years (Abbott, 2003; DeWert et al., 2003; Merseth, 1991) and one of the more recent studies raised concerns about whether the program would be able to continue beyond the next year when the current grant funding was scheduled to end (Metiri Group, 2007). We also noticed the changes that occurred over time in terms of the sophistication of the technologies used for each program. Early programs utilized email (Merseth Group, 2007); later programs used discussion board applications (Klecka, Clift, et al., 2004); and more recently developed programs integrated a combination of discussion board, filesharing, and synchronous text chat applications (Jaffe et al., 2006; Metiri Group, 2007). None of these programs utilized synchronous video or audio conferencing.

Most studies investigated issues related to levels of participation and satisfaction using self-report surveys, participant interviews, and analysis of discussions. Participant concerns regarding confidentiality surfaced in more than one study (Klecka et al., 2002; Merseth, 1991; Metiri Group, 2007). In addition, multiple studies indicated that levels of participation might be positively impacted by opportunities for participants to meet face-to-face prior to online interactions (Klecka et al., 2002; Merseth, 1991; Metiri Group, 2007). In addition, the presence or quality of the online moderator or mentor might influence participation and satisfaction (Friel, 2000; Holland, Dede, & Onarheim, 2006; Klecka et al., 2002). A majority of the initiatives struggled to generate participation (Friel, 2000; Holland et al., 2006; Klecka et al., 2002; Merseth, 1991; Metiri Group, 2007) with the exception of programs that established requirements for program completion or credit (Klecka, Cheng, & Clift, 2004). Only two of the studies described possible offline barriers to participation or satisfaction. These researchers found lack of time (Metiri Group, 2007) and support from institutional leaders (Dede & Nelson, 2005; Holland et al., 2006; Metiri Group, 2007) to be possible issues impacting participation.
Metcalfe’s law is commonly associated with issues of participation (National Science Board, 2002). This law focuses on the value present within a network, and specifically says that the value of a network grows proportionally to the square of the number of users. The value an individual finds within a network increases as the number of users increases, and the total value of the network increases much more rapidly than the increase in participants. This illustrates why adoption of a new technology occurs much more rapidly once a critical mass of users has been reached. In a study of e-mentoring, Cheng (2008) also found that participants often indicated that lack of time was a primary reason for not participating in the online discussions. However, she questioned this reason and argued that these participants chose not to allocate their time to these online discussions because they did not find their online participation to be of sufficient value. Cheng’s argument echoed those of Metcalfe.

Returning to our review of technology and induction studies, we also found patterns related to perceived value as a result of participation (Clift, Hebert, Cheng, et al., 2010). Some of the studies reported findings related to the participants’ needs that were or were not met. Multiple studies reported that participants felt a reduced sense of isolation (DeWert et al., 2003; Friel, 2000; Merseth, 1991). In addition, some studies found that participants appreciated the emotional support they received from other participants (DeWert et al., 2003; Merseth, 1991), as well as the opportunities for reflection about their own teaching practices and beliefs (DeWert et al., 2003; Merseth, 1991). Five studies analyzed discussion postings to assess the types of conversations or the quality of the conversations (Abbott, 2003; DeWert et al., 2003; Jaffe et al., 2006; Klecka, 2004; Merseth, 1991). Study findings were mixed regarding the depth of analytical and critical discussion regarding teaching practice and pedagogical knowledge. However, this may be more a result of the varied methodologies used for analyzing the
discourse. With a limited quantity of studies and without common methodologies, no assertions can be made about whether these differing findings are actually differences in the levels of discourse or differences in the researchers’ interpretations.

An ERIC search for any additional publications regarding the use of internet-based communications for teacher induction produced only a few results that build on the review described above. E-mentoring for Student Success (eMSS) was one of the eight initiatives included in our earlier review, and this program was one of only two that utilized an external evaluator or that mentioned efforts underway to begin investigating teacher change as a result of participation (Jaffe et al., 2006). An additional study has since been published that builds on previous findings. eMSS developed through a partnership between the New Teacher Center in Santa-Cruz, California and the University of Montana. This initiative provided new secondary math and science teachers in remote areas with access to a trained e-mentor with teaching experience in the same content area, as well as providing electronic resources and access to scientists and mathematicians. The original eMSS study reported preliminary findings that only 10% of the electronic discussions focused on building content or pedagogical content knowledge (Jaffe et al., 2006).

The recent study investigated the nature and quality of online discussions between the mentoring pairs only (Simonsen, Luebeck, & Bice, 2009). Using a rubric for knowledge types, the researchers first removed 76% of the discussion from analysis due to a focus on personal life or eMSS logistics. From the remaining discourse, they found that most postings fit the pedagogical and pedagogical content knowledge types with a considerably smaller amount focused on content knowledge. They also found that the beginning teachers’ pedagogical content knowledge posts were nearly three times the number of those posted by the mentor. An
investigation of the discussion threads revealed that this was a result of the mentors’ techniques of avoiding problem fixing and focusing, instead, on problem solving and guided inquiry. The beginning teacher would then report the results after putting one or more possible solutions to the test.

Researchers also disaggregated these data between new eMSS teachers and those in their second year. Researchers found that discussions of content knowledge and pedagogical content knowledge were more prominent in year two than year one and that first year participants focused more heavily on general pedagogical knowledge (Simonsen et al., 2009). Researchers also found that the quality of the postings in terms of the level of the co-construction of knowledge nearly doubled in the second year of the program.

Two additional publications surfaced regarding internet-based communications and teacher induction. Both of these initiatives focused on meeting the needs of novice special educators. Similar to the Clift, Hebert, Cheng, et al. (2010) review of literature, both of these initiatives were developed by a higher education institution and were intended to serve graduates of their respective programs. East Carolina University matched one-on-one e-mentors with recent graduates and utilized Moodle, an open-source course management system, for mentor and beginning teacher modules to be completed together each month (Williams & Warren, 2007). This publication only contained a description of the initiative’s format and no description or assessment of the initiative’s implementation.

The second program utilized a teaming approach to beginning teacher support and focused the initiative’s design around a well-grounded problem-solving protocol (Hobbs, Day, & Russo, 2002). Teams consisted of two preservice special educators, one first-year beginning teacher, and two special education faculty members. The online system was developed using a
conference room metaphor where the participants logged into this virtual room to see a conference room table with the current problem’s title in the center of the table. The first-year teacher would post a description of a current problem he or she was struggling with in the classroom and the other team members could contribute to the problem solving process at their convenience. Researchers found that this system did not provide a means for social-emotional conversations or general reflection amongst participants. The focus was only on this collaborative problem-solving process. In its pilot year, participants indicated that the initiative contributed to an increased sense of professionalism. Despite their differing levels of experience, everyone’s ideas felt validated and important to the process. The first year teachers also expressed particular satisfaction with the focus on constructive problem solving rather than the complaining that they often heard from their colleagues.

**Internet-based communications discussion.** Compared to the review of internet-based professional development, the review of internet-based communications for induction similarly found the field to be lacking in studies of impact on teacher learning, teacher change, and student achievement. In addition, the majority of researchers in both pools of literature played key roles in the design of the technology or the program under investigation. In addition to having far fewer empirical studies available for review, the internet-based induction literature differed significantly from that of internet-based professional development with minimal information available regarding the initiative’s design process and the nature of the discourse—two areas containing rich findings within the online professional development research (Whitehouse et al., 2006; Clift, Hebert, Cheng, et al., 2010). Research regarding the use of synchronous video or voice-over-internet-protocols (VoIP) was non-existent, though these tools have been used within the past few years for preservice teacher supervision and coaching.
Video and audio conferencing. Due to the nature of my case study, I needed to learn more about the use of video and VoIP, so I expanded my search for literature to include video or voice technologies used within preservice teacher education. The pool of studies that surfaced was small, but somewhat similar to the previously reviewed studies. They were program specific, predictably based out of higher education institutions, and primarily descriptive in nature. One notable difference, however, was the overwhelming focus on special education and on supervision in rural schools. Project TEEACH (Transforming Elementary Educators into Advocates, Change Agents, and Highly Qualified Special Educators) focused on recruiting inservice teachers in southeastern rural areas to work toward a dual certification in special education (Rock, Gregg, Gable, et al., 2009). A university faculty member observed the teacher candidate in practice, and provided real-time feedback and suggestions from miles away. The university coaches used the video-conferencing system, Skype, to watch what was occurring in the classroom, and the classroom teacher wore a Bluetooth enabled earpiece so that the coach could hear the classroom conversation and whisper feedback and suggestions into the teacher’s ear as she worked with students. While no empirical evidence was reported in this article, it provided an example of adopting this technology to potentially address two recommendations from the rural schools literature: (a) Increasing the use of internet-based communications to improve teacher quality in rural schools, and (b) implementing a grow-your-own strategy to fill hard-to-staff positions in rural areas. It was an article about Project TEEACH that led EdCentral, the case under study for this dissertation, to experiment with distance mentoring.

Another study of technology used for teacher training occurred in rural Utah. Two special education student teachers, their cooperating teachers, and a university faculty member used a Sorenson EnVision video conferencing system to conduct classroom observations and to meet
one-on-one to discuss the student teachers’ portfolio development (Falconer & Lignugaris/Kraft, 2002). Using the supervisor’s field-notes taken during and after each virtual conference, as well as interviews with all of the participants, researchers conducted a qualitative study to determine the benefits and limitations of using this technology for supervision purposes. One rural strategy for preservice supervision was to train the on-site cooperating teachers to conduct observations and provide feedback to the student teachers. The Utah faculty noticed that their cooperating teachers were not always comfortable or confident in their abilities to do this well; despite the training they received in the summer. The video conferencing allowed the faculty member to co-observe the student teacher alongside the cooperating teacher. The faculty member could then mentor this on-site supervisor in observational and feedback techniques. In addition, the faculty member was able to provide direct observation of the preservice teachers more often than if she had to do so in person. The preservice teachers appreciated the ability to share their portfolio progress with the faculty member, and to reflect about their own practices along with their instructor. Another reported benefit was the novice’s just-in-time access to university faculty. If a cooperating teacher or preservice teacher was struggling with an issue and needed quick assistance, the rural-school teachers found that the faculty member was often available at short notice.

Unexpectedly, the cooperating teachers were found to be more excited about this technology than the student teachers, causing the researcher to question how her findings would differ if the cooperating teachers had not been technologically savvy (Falconer & Lignugaris/Kraft, 2002). The cooperating teachers found multiple other uses including the ability to observe one another in the practice of working with students. They also described instances where one of the cooperating teachers needed to leave her room to work with another student on
her caseload. The other cooperating teacher was able to monitor the classroom situation, ready to hurry down the hall to assist the lone student teacher if necessary.

At the time of this study, the technology had its limitations. The EnVision system remained connected to a desktop computer, making it immobile (Falconer & Lignugaris/Kraft, 2002). In addition, the microphone was not wireless, causing challenges with the cable. The equipment and the network were not always reliable, particularly when using a dial-up modem to connect to the internet. Overall, the participants appreciated the ability to connect more regularly, despite the 285 miles between the school and the university. They all agreed that the video conferencing was better than nothing, but that in-person interactions would be preferable.

The final study relevant to this discussion was the only one that did not focus on special education. The Technology Supported Induction Network (TSIN) served students in the elementary education program from the University of Wyoming (Fry, 2006). TSIN incorporated discussion boards and online, video-based professional development opportunities. Of the 15 preservice participants, only four posted more than four times to the discussion boards and 12 attended at least one professional development session. Based on interviews, field-notes, and discussion board postings, the analysis found that the discussion board was used overwhelmingly for reflection. The researchers hypothesized that this could have been due to the nature of the weekly discussion prompts posted by the faculty. In contrast, the analysis indicated that preservice teachers used the professional development sessions for reflection, social-emotional support, curricular assistance, connecting with peers, and connecting with the university. By using the video session for opportunities to network with their peers, as well as to learn from faculty and experts in the field, the preservice teachers felt less isolated during their practicum placements, and they also reported that the sessions contributed to improving their instructional
practices. Prior to conducting the exit interviews, the program coordinator was ready to declare the discussion boards an ultimate failure and the video only a mild success. However, the exit interviews indicated that the preservice teachers felt that both of these were invaluable. Some non-participants indicated that they really appreciated knowing that the discussion board was available, but they did not have sufficient time to make use of it the way they would have liked. In addition, some of the non-participants reported that they benefited from reading what others posted.

While the above examples of technology usage were geared toward meeting preservice student and faculty needs, the issues of providing induction for beginning teachers in rural areas do not differ by much. Novice teachers need to feel connected to their peers and they need assistance and guidance from experienced teachers in the field. Using internet-based communications provides an avenue for doing this despite geographic distance. Evidence indicates that these technology tools can help reduce feelings of isolation and encourages reflection about practice. In addition, a small amount of evidence points toward teacher change (Jaffe et al., 2006; Simonsen et al., 2009).

**Framing the Study**

In the literature reviewed above, studies of internet-based communications used for induction or preservice teacher training assessed program satisfaction, levels of participation, or how well the initiative addressed participant needs. Contextual issues occasionally surfaced within the researchers’ assertions regarding why things did or did not work as they had expected. For example, Holland and colleagues (2006) formulated assertions that administrator buy-in and understanding of the online system played a role in the lack of beginning teacher use of the Milwaukee Public Schools Professional Support Portal. Metiri Group’s (2007) external
evaluation of the Teacher Learning in Networked Communities initiative and Fry’s (2006) study of the Technology Supported Induction Network in Wyoming reported that lack of time was a participation barrier.

Critiques of induction and mentoring research find fault with the lack of attention given to context (Strong, 2009; Wang et al., 2008). In summarizing the field of induction research, Wang and colleagues said, “Most of the studies failed to consider how the structured [induction] components were shaped by the broader contexts of the school culture. Even the case studies failed to attend to the deep social, cultural, and organizational connections and the contexts of schools, students, and communities” (2008, p. 146). Studies of internet-based communications for professional development and novice teacher induction have left this area virtually unexplored other than those assertions previously described.

The research questions. Rather than allowing contextual issues to surface as an afterthought or as a potential explanation for outcomes, this study conscientiously sought to understand contextual issues associated with this multi-district induction program as leaders integrated technology for the purpose of meeting new teacher needs. I wanted to understand what it was like to be involved with EdCentral’s induction program as the leaders initiated these changes.

Fullan’s (2007, 2009) educational change theory emphasized the need for coherence across the entire system. All participants and policy makers should be aligned with a shared purpose, and all decision-making should occur with that purpose in mind. He argued that attempts to implement a new initiative must consider the system as a whole, and leaders should not adopt a new initiative solely on the promise of a particular outcome. “An understanding of what reality is from the point of view of people within the role is an essential starting point for
constructing a practical theory of the meaning and results of change attempts” (Fullan, 2009, p. 55).

Built on a conceptual framework informed by Fullan’s (2007, 2009) change theory, the findings from the above literature review, and the case itself, four sub-questions framed this study:

- In what ways do participants’ perspectives of, and experiences with, EdCentral’s initiatives differ by role (coordinator, district superintendent, principal, mentor, and beginning teacher)?
- How are participants’ experiences within this induction program impacted by levels of economic and human capital available in the districts and at EdCentral?
- How does prior experience with technology relate to how individuals experience the integration of technology in the induction program?
- How does EdCentral’s regional work align with individual district, school, and teacher needs?

**Conceptual framework.** Two primary theories lay the foundation for this study. I use the term foundation because while other portions of the conceptual framework evolved during the course of the study, these two theories embodied the study’s overall purpose and remained relevant throughout.

The first of the two theories was introduced in the previous section, Fullan’s (2007, 2009) theory of educational change. Based on years of experience with school reform projects, Fullan (2009) described eight key drivers necessary for systemic change: (a) engaging people’s moral purpose, (b) building capacity, (c) understanding the change process, (d) developing cultures for learning, (e) developing cultures for evaluation, (f) focusing on leadership for change, (g)
fostering “coherence making” meaning alignment of initiatives toward a single purpose, and (h) cultivating “tri-level development” meaning addressing change at the school level, the district level, and the state level simultaneously (p. 10-15). Fullan (2009) argued that when all of these drivers are effectively implemented, the likelihood for sustainable, ongoing, and systemic change increases.

The second foundational concept is that of the realization of innovation. As evidenced in the literature review, the promise and the realization of innovations are often not synonymous. The adoption of new innovations often involves “situation-specific compromises between the old and new ways of doing things” (Bruce, 1993, p. 1). How an innovation comes to be used (or not used) is not just a function of the innovation’s design, nor is it solely the result of the social system being introduced to the innovation. Instead, an innovation’s characteristics can only be defined in terms the “the properties that emerge as it comes to be used in different settings” (Bruce, 1993, p. 22).

As an example from the literature reviewed above, the Sorenson EnVision equipment used by the Utah special education preservice program (Falconer & Lignugaris/Kraft, 2002) was built and designed for the purpose of breaking down communication barriers for the deaf and hard-of-hearing (Sorenson Communications, 2010). It was created as a replacement for the telephone so that deaf and hard-of-hearing individuals could communicate with one another using sign language via compressed video or by using text messaging. Yet Utah’s special education faculty appropriated this technology for supervising student teachers across great distances. Appropriation is just one possible outcome that results from a negotiation between the technology and the social system.
Eglash (2004) made a strong case for the study of the appropriation of technology. He argued that most studies of technology either describe the professional design process or the impact of that technology on society. The empirical literature regarding online professional development reinforces this claim given that the Whitehouse and colleagues’ (2006) review found a wealth of strong studies related to initiative design. An appropriation stance to the social study of technology investigates how the general public reinvents a technology, often in ways that confront or resist the cultural power structure. Eglash (2004) laid out a continuum of appropriation activities that fall somewhere between pure consumption and pure production of the technology. Types of appropriations range from giving a technology a new meaning to modifying the object’s structure and simultaneously changing its purpose and its meaning.

Eglash (2004) argued that the appropriation of technology has the potential to strengthen democratic participation; but again, potential and reality do not always align. Returning to the Utah EnVision example, the university faculty member appropriated the technology for supervision purposes (Falconer & Lignugaris/Kraft, 2002). This repositioned her along the consumption-production continuum, but what about the preservice and cooperating teachers? Would their experiences with the technology have changed if they had a greater role in determining how the technology would be repurposed? Related questions also apply to this particular study. Do all of the stakeholders involved in the process of integrating technology into the induction program share a common purpose for this change, or have the program leaders defined the purpose based on their own perceptions of what needs to occur?

The literature related to the use of internet-based communications for beginning teachers often uses a pro-innovation discourse that focuses on the promising potential without observing the role played by the social system into which the innovation is introduced (Rogers, 2003).
Instead, Bruce (1993) argued that an innovation should be viewed as a process of negotiation with the social system, rather than as a fixed object. Perhaps the innovation is changed (or appropriated) during the course of this negotiation, perhaps the social system changes in some way, perhaps changes occur to both, or maybe nothing changes at all. This conceptual idea of adoption of innovation illustrates the importance of choosing to study interactions as opposed to influence or impact. Rogers (2003) also defined how a study of the diffusion process includes more than just the innovation itself, but also the process of communication within a social system over time. He recommended a number of strategies to help avoid a pro-innovation bias, many of which were applied during this study. He recommended:

1. Real-time data collection as opposed to the usual use of post-hoc data,
2. Selecting unsuccessful as well as successful instances of diffusion,
3. Considering rejection and reinvention of the innovation to be just as valid a response as acceptance,
4. Investigating the broader context where the diffusion is occurring, and
5. Seeking to better understand the why of adoption, or the individuals’ motivations to accept, refuse, or reinvent.

Bruce (1993) and Rogers (2003) agreed that all activities are situated within a broader context. This also links back to Fullan’s (2009) key drivers of change, and his concept of tri-level development where district, state, and federal initiatives should work simultaneously toward the same common purpose in order for systemic change to occur. State and federal policies, as well as the current economic situation influence the planning and implementation of the initiative being studied.
This study of experiences associated with the integration of technology into the induction program was also framed by multiple learning theories. For example, the program coordinator chose to begin using technology last year to reduce travel costs and time. Her efforts may or may not have met her expectations, but regardless of the results, she learned something. Falk and Drayton’s (2009) anthology provided a behind-the-scenes glimpse into the design process of seven different online professional learning communities. When summarizing across all of these initiatives, they noted that the designers were involved in an ongoing, iterative process. Issues of learning and developmental processes, both from the coordinator and from the beginning teachers and mentors, were important to this study.

Multiple theories fit within this particular conceptual frame. Lave and Wenger’s (1991) theory of a community of practice and legitimate peripheral participation, a group with varied levels of expertise generate knowledge through their interactions and contributions to the group’s task. Differing levels of participation are acceptable and even expected. Expert members take on more complicated tasks while the novice observes, and the novice contributes less complicated pieces, legitimately learning from the periphery yet still contributing to the knowledge base.

Also relevant was Knowle’s (1980) model of andragogy, or “the art and science of helping adults learn” (p. 43). Providing induction requires an understanding of adult learning theories. The primary assumptions of andragogy focus on the needs specific to adult learners. These include the need to be self-directed, the need for experiential learning activities, the need for timely information and skills (more commonly referred to as just-in-time learning), and the need for build competencies necessary to achieve one’s fullest potential.

Similarly, the Concerns Based Adoption Model (CBAM) argued that the process of adopting a change of some type can be defined by a series of stages that focus on an individual’s
concerns at a given point-in-time (Hord, Rutherford, Huling-Austin, & Hall, 1987). These stages are based on Fuller and Bown’s (1975) stages of concern framework that they developed based on a meta-analysis of novice teacher development studies. The CBAM stages begin with the self concerns of “awareness” and “informational” where the individual needs to understand what the innovation is, and “personal” where the individual needs to know how the change will affect him or her (Hord et al., 1987, p. 31). This is followed by the task stage of concern called “management” where an individual needs help with how to logistically manage the change. The final stages of concern fall into the impact category where an individual’s focus moves beyond him or herself to include how the change affects others. The “consequences” stage wonders how the change affects others, the “collaboration” stage involves questions about how others are handling the same kind of change, and “refocusing” is when the individual starts thinking about how to improve upon the innovation (Hord et al., 1987, p. 31).

Overall, the conceptual framework for this study focused on the process of change. This included organizational change associated with how induction was provided once internet-based technologies were integrated into the program. As the organization experienced change, so did the individuals involved.

The study. This qualitative study of EdCentral’s induction program was important for a number of reasons. This study built on assertions and weaknesses found in prior studies by specifically focusing on the offline experiences and context in conjunction with the online. It addressed multiple gaps in the research—induction in rural schools, technology-based innovation in education that was led by a practitioner rather than an academic, cross-district coordination, and synchronous technology strategies rather than asynchronous. In addition, this study was conducted by someone other than the innovator or program coordinator, something that you do
not see in the literature of technology integration very often. While I have a connection to this particular induction program, I am not the coordinator or developer of this initiative.

In the next chapter, I describe the methodological details of this study. The conceptual framework described above provided the basis for this process of inquiry and contributed to my interpretations of the data that led to my assertions related to EdCentral’s experiences. In the words of Dewey, “Need and desire—out of which grow purpose and direction of energy—go beyond knowledge, beyond science. They continually open the way into the unexplored and unattained future” (1976, p. 229). EdCentral’s leaders saw a need to reduce travel time and costs for their beginning teachers. In addition, finding mentors with appropriate subject-matter expertise for teachers in small schools was a prevalent concern for teacher induction in the region. They had the desire to tackle these issues and in so doing, contributed to our knowledge and opened the way.
Chapter 3
Selection and Study of an Informative Case

I have been wrestling with questions about teachers’ use of technology for their own professional growth and knowledge development since my first year in the doctoral program. My work at the Illinois New Teacher Collaborative (INTC), in combination with my studies, increased my awareness of the unique needs experienced by beginning teachers that often go unmet. Being a technophile, I imagined ways that technology could help address these unmet needs. However, my own experiences trying to develop INTC’s online discussions for new teachers and induction leaders, plus the research of similar online initiatives, were filled with examples of reported potential that went unmet.

This study used qualitative case study methodology (Stake, 1995, 2010) to gain an experiential understanding of how things work for a rural, multi-district induction program as they experimented with internet-based communications. The focal induction program was selected because of its unique ability to provide insight into the process of adopting technology-based innovations for beginning teacher induction purposes. Case study methodology provided the best means of gaining insights into the multiple perspectives of those associated with the induction program as they participated in this innovation process. It provided an in-depth examination of a case from which others in similar situations can learn.

Introduction to the Case

It was through my employment at INTC as a co-coordinator for the state’s grant-funded induction programs that I became familiar with a funded program that was using technology in a way that I had not encountered before—not in my interactions with hundreds of induction
programs across the state nor through my reading and networking with others in the nation who were interested in technology’s potential for serving the novice teachers.

I met Robin, the coordinator of the EdCentral induction program, during the 2009-2010 school year while I was hosting an online meeting for induction program coordinators interested in using internet-based tools within their induction programs. During the time set aside for participant sharing, Robin shared EdCentral’s plans to use Skype video-conferencing software and Bluetooth headsets for conducting mentoring observations from afar. Six months after that web-meeting, Robin had completed pilot-testing of the Skype and Bluetooth observation process with a volunteer beginning teacher. In addition, she had experimented with the GoToMeeting™ web-meeting platform to bring groups of beginning teachers and groups of mentors together synchronously, or in real-time, to participate in a workshop-type activity via the Internet.

EdCentral was making plans to continue improving and expanding the use of these internet-based induction supports during the 2010-2011 school year, and I wanted to know what this particular initiative was like and how it was experienced by those involved. I also knew that the lessons learned from EdCentral’s process of innovation would inform others interested in doing something similar. In late August 2010, the EdCentral induction program officially became the object of this ten-month study.

EdCentral was the professional development provider for three ESAs that serviced six counties. In all, a total of 48 school districts, primarily rural and small, could potentially be receiving services at any one time, across a geographic region that was larger than twice the size of Rhode Island³.

³ The six counties served by the EdCentral service agency cover a geographic area of approximately 3,480 square miles which is about 2.3 times the size of Rhode Island according to the Wolfram Alpha Computational Knowledge Engine (http://www.wolframalpha.com)
Key events leading toward technology integration. EdCentral’s efforts to integrate technology into the induction program began in the spring of 2009 when the director, Beth, applied for a beginning teacher induction grant from the State Board of Education (SBE). Beth chose Robin as the coordinator of the grant-funded program due to their joint experiences coordinating professional development schools in the region nearly ten years earlier. Their grant request was approved in June 2009, providing EdCentral with $65,400 for program planning and training during the summer. Beth came across the article See Me, Hear Me, Coach Me (Rock, Gregg, Howard, et al., 2009) in a staff development journal soon after grant approval and excitedly shared it with Robin. With a small continuation grant from SBE the following winter of $30,000, the induction program was able to continue providing services and stipends for participants through August 31, 2010; and a webcam was purchased for each participating district along with four Bluetooth headsets to begin experimenting with Skype distance mentoring and online workshops. 

Of the thirty potential districts served by EdCentral, just over a dozen signed up to participate in the 2009-2010 grant-funded induction program. Participating districts in the grant were strongly encouraged by EdCentral to provide their own, local mentoring of beginning teachers, and EdCentral supplemented the districts’ efforts by providing workshops for beginning teachers focused on content such as classroom management and parent communication, mentor training was provided for the districts’ mentors, and occasional networking opportunities for district mentors to discuss and further develop their practices. In addition, EdCentral served as a source for assistance when districts had questions about how to best provide a local mentoring program. To be clear, the EdCentral induction program was not a mentoring program. It was, instead, the combination of the supplementary induction services
described above. The EdCentral regional induction program and those involved in these services during the 2010-2011 school year comprised the case that I selected for this study, and I wanted to know what it was like to be a part of EdCentral’s induction initiatives during this time of technology integration.

**Research Questions**

When I entered this study, I did not know exactly what I would see, hear, or otherwise experience by taking a closer look at EdCentral’s induction program, but I knew the literature related to technology use for new teacher support and I had a basic idea of what EdCentral was trying to do with technology. This prior knowledge led me to enter this study with a handful of research questions that I suspected might be relevant. However, it was not until I had designed my initial questions and began conducting observations and speaking to participants that I was able to begin the process of “progressive focusing” (Stake, 2010, p. 129-132), or a gradual and thoughtful process of revising. As the study progressed my questions evolved. They informed my decisions about data collection and analysis procedures, and in turn the data collection and analysis informed revisions to my questions. Below I briefly explain this evolution of research questions that resulted in the questions answered by the data from this case. Table A1 provides the collection and analysis procedures used to investigate the four primary questions.

**A question of resources.** The literature reviewed in Chapter 2 described prior studies on technology integration where the educators blamed time constraints for their limited participation in the initiatives (Cheng, 2008; Klecka, Cheng, & Clift, 2004). These previous studies focused on asynchronous technologies, like discussion forums, that did not require participants to be online at the same time in order to interact. However, my study was about synchronous activities, and I was curious as to whether or not this would make a difference. In addition, rural teachers
reportedly have more extracurricular responsibilities than their non-rural peers (Hare, 1991). I initially wanted to know how these issues of time availability would affect those involved with the EdCentral induction program.

As I was planning this study, EdCentral was receiving grant funds from SBE, but on the second day of data collection, I learned that EdCentral leaders had decided not to apply for continuation grant funds. Now the availability of funding became an added issue and this research question evolved into a question about resource availability, rather than only about time availability. This research question went through one more change as I noticed a number of challenges experienced by the participants related to insufficient human resources, like a PE teacher not having access to another PE teacher to go to with questions about teaching physical education. In addition, issues of time availability were directly embedded in the issues related to fiscal and human resources. In the end, this question was primarily about the economic and human capital available in the district and at EdCentral.

**Question:** How are participants’ experiences within this induction program impacted by the levels of economic and human capital available in the districts and at EdCentral?

**A question of differing perspectives.** While understanding multiple perspectives is an important component of the case study methodology (Stake, 2010), I felt it necessary to call this out as a specific question of this study. Robin had described how mentors’ participation rates had been much lower than those of the beginning teachers during the pilot year. Additionally, I wanted to better understand Robin’s perspective as EdCentral’s program coordinator and the leader of the technology integration efforts. The coordinator’s perspective is often missing from studies about induction programs and technology use for professional development purposes. Like the first question, this one also expanded in breadth over the course of the study. Initially, I was most curious about the differences between the coordinator’s, mentors’, and beginning
teachers’ experiences. This initial question expanded in late January when the distance mentoring initiative ran into a barrier that proved insurmountable—a building principal. What started as a question about three varying perspectives expanded to include five distinct roles.

**Question:** In what ways do participants’ perspectives of, and experiences with, EdCentral’s initiatives differ by role (coordinator, district superintendent, building principal, mentor, and beginning teacher)?

**A question of technology experience.** The third question remained the same throughout the study, although its intention changed to some extent. Literature related to generational differences generalizes younger teachers as more tech-savvy than their veteran colleagues (Behrstock & Clifford, 2009), and I wanted to test those generalizations. Originally, I was hoping to gain an understanding of how prior technology habits and experiences related to an individual’s decisions about participation, levels of satisfaction or comfort, and observed interactions during EdCentral’s technology-based activities. However, limited participation by mentors and beginning teachers in EdCentral’s activities resulted in this question providing less information about the program participants’ technology experiences and more information the coordinator’s experiences than initially expected.

**Question:** How does prior experience with technology relate to how individuals experience the integration of technology in the induction program?

**A question about multi-district coordination.** When one of the principals put the brakes on the Skype distance mentoring initiative, I had to change my final research question, too. My original interest was to gain an understanding of the component districts and how local district cultures influenced the beginning teachers’ and mentors’ experiences with the EdCentral induction program. Then, in mid-year, a beginning teacher interested in being paired with a distance mentor went to his principal to obtain permission to participate in this initiative; and the principal refused to sign the contract because he felt this would be too much for the new teacher
to manage. In addition, I noticed during early interviews and survey responses that administrators and mentors occasionally did not know about EdCentral’s technology initiatives or workshop sessions for their beginning teachers. I realized that the research question should not, at this point, be about district contexts impacting experiences; but instead, it needed to be about the extent of district and EdCentral alignment with one another and their alignment with the needs of teacher participants.

**Question:** How does EdCentral’s regional work align with individual district, school, and teacher needs?

**Data Collection**

Qualitative research methods often come under fire as being too subjective and biased, but even the tightest of quantitative studies still contain a certain amount of researcher interpretation (Stake, 2010). Quantitative methodologies aim to generalize findings across similar contexts and participant groups, but these methods cannot gain the depth of understanding about a particular situation that naturalistic inquiry is able to provide (Lincoln & Guba, 1995; Stake, 2010). However, qualitative researchers must take the time and effort to conduct and report the study in such a manner that the reader is, at best, persuaded to accept its trustworthiness (Lincoln & Guba, 1995, p. 329). In order to gain an understanding of how participants experienced EdCentral’s induction activities and to provide the reader with trustworthy interpretations of the situation, I spent an appreciable amount of time in the field to be able to understand the context, to clarify the unexpected findings, and to gain the trust of the participants. Efforts to triangulate and disconfirm were necessary to increase “the probability that findings will be interpreted by the reader as credible” (Lincoln & Guba, 1995, p. 329; Stake, 2010). These efforts are not only

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4 Prior to any data collection, approved Institutional Review Board (IRB) informed consent procedures were followed. In addition, all data collection, analysis, and reporting followed IRB approved procedures for removing personal identifiers, storing data in secure locations, and other precautions to reasonably protect the confidentiality of participants.
for convincing the reader of this study’s credibility, but also convincing myself. I knew that I was entering a study of a program’s initiative of which I am a huge fan. Therefore, I needed to remain vigilant throughout in questioning my interpretations. Stake (2010) said, “Doubt that immobilizes can be hurtful, but doubt can be a protective shield. Doubt can cause digging toward a better understanding” (p. 53). There were times during the course of this study when I was nearly immobilized by doubt until reflection led me to realize how that doubt actually contributed to my understanding of this case.

What follows is a description of the key data collection and analysis activities that comprised this case study of EdCentral’s induction program during the 2010-2011 school year. A detailed chronology of the key events during this study can be found in Table A2.

**Workshop observations.** Between late August 31 and the end of the following January, the EdCentral induction program hosted a total of five workshops for beginning teachers and one workshop for mentors. I attended all of them as a participant observer. During the session, I took brief notes to remind me of important experiences, and I expanded these into narrative field notes capturing the details of the experiences as soon as possible following the event. In conjunction with the observation, additional documents were collected and reviewed as necessary to understand participant experiences. These documents included forwarded communications that Robin sent to program participants with announcements about EdCentral activities, handouts and artifacts from the face-to-face sessions, and anonymous feedback forms collected at the end of most sessions. Three of these sessions occurred face-to-face and three of them occurred online. By observing both types of workshops, I was able to see the entire flow of EdCentral induction offerings during the year and compare the face-to-face experiences with the online experiences. I paid attention to who attended, what the activities were like, what Robin
did to lead, and how the attendees participated. These data contributed, in large part, to an experiential understanding of EdCentral’s induction supports from the beginning teacher and mentor perspectives.

**Face-to-face.** Three of the beginning teacher workshops occurred face-to-face in the boardroom of the Kinsdale school district located in the same town as EdCentral’s offices. These evening Just-in-Time sessions, as they were called, lasted about two hours each and focused on content such as classroom environments, parent communication, and self-assessment using the state’s professional teaching standards. These face-to-face observations provided opportunities to build relationships with the participants and contributed data for comparison with the online workshop sessions to understand the relationships between these two types of activities provided by EdCentral’s induction program.

As a participant observer, I mingled with participants as they arrived, sat amongst them during activities, and participated in some of their small group activities. During the August 31 Just-in-Time session, I joined a small group of primary teachers in a jigsaw activity that involved dividing up a reading about classroom environments and then taking turns sharing with the rest of the group the highlights from each portion of the chapter. I selected this group for two reasons. First, this group contained two of three teachers from a district that evidently did not have its local mentoring program operational yet. This information surfaced during a whole group discussion that night. It grabbed my attention as an interesting district context that differed from the others because the other beginning teachers had already met their mentors, so I wanted to find out more. Secondly, this small group contained the fewest number of grade-level participants meaning that I could help shoulder some of the reading load while at the same time getting to know the members of this group better. During the course of our classroom
environment discussion, one of the teachers without a mentor described his elementary PE assignment where he had 50 kindergartners in one of his classes, and how hard it was to even learn their names, let alone build a relationship with them. If I wanted to know how individual teaching contexts relate to how someone experiences EdCentral’s initiatives, this teacher’s story sounded like it would be an interesting one. This PE teacher, Mike, would become a key informant for this study and the face-to-face workshops provided the opportunity for me to establish a relationship with Mike and other new teachers in the region.

**Online.** Two beginning teacher sessions and the one mentor session were held online using the GoToWebinar™ or GoToMeeting™ platforms (http://www.gotomeeting.com). These sessions were shorter in length than the face-to-face sessions, and participants stayed in their home schools and used their computers and internet connections to attend the workshop. The session facilitator and the attendees logged into the online meeting at the scheduled time using the URL supplied in an email message. Once participants were in the online meeting room, they would see the facilitator’s computer screen. This way the facilitator could share a powerpoint or display particular websites or files on her own computer, allowing the participants to view them as well. The facilitator and participants could speak to one another verbally using the microphone built into the computer or the webcam that EdCentral purchased for each of the districts.

I attended all three of these online workshops and again recorded field-notes for the first two sessions. For the third workshop, which occurred in January, I was the primary facilitator for the beginning teacher session. This session was recorded and posted on EdCentral’s blog for later viewing by the beginning teachers. Knowing that facilitation reduced my ability to observe, this session was transcribed from the recording. Additional plans were made for online sessions
for mentors and for beginning teachers in February. The mentor session was cancelled due to a snowstorm and was never rescheduled, and that was the end of EdCentral induction events for that school year. No other communications were sent to the participants other than email messages in the spring to recruit survey and interview participants for this study. I logged into these meetings from my own computer from another part of the state, observing from a distance along with the teachers participating with the online meeting.

**Coordinator planning and reflection sessions.** An additional 10.6 hours were spent co-planning and reflecting with Robin, EdCentral’s program coordinator throughout the academic year. These one to two hour sessions would occur before and after each workshop with additional progress report conversations scheduled when more than a month would pass without any events. I initially planned for my role during these sessions to be more from the interviewer stance than that of collaborator, but this positioning was too difficult and uncomfortable for me to maintain. During the first interview, Robin and I shared observations and our interpretations of those observations. We also co-reflected about how the observations informed decisions about future EdCentral activities. The collaborator role took the more prominent front-seat to that of researcher during these sessions. On occasion, EdCentral’s director, Beth, would join our discussion, providing a third coordinator-type perspective with an interest in the induction program’s progress, ideas for implementation, and familiarity with the districts, but not directly involved with implementation of the program.

This change produced more naturalistic interactions because it built on the type of relationship we had started during the previous year. Around the same time in 2009, Robin and I both began experimenting with the GoToMeeting™ platform, and we had already been sharing our lessons learned with one another. My relationship with her had already been established as a
critical friend and as a source for information about what other induction programs were doing. Even though the EdCentral program was no longer a part of my caseload as the statewide coordinator for SBE-funded induction programs during the 2010-2011 school year, I continued to provide similar supports for Robin because this was the relationship that we had established during the previous school year. In this respect, I was a participant observer in this study (Pearson, 2005; Smith, 1997; Stake, 2010). I was cognizant of this dual role of researcher and participant throughout the study, and the implications of this will be discussed in greater detail later in this chapter.

Because of my active participation in these discussions, I used an audio-recorder and transcription to capture these discussions. These notes were then coded using the process described in the analysis portion of this chapter. These data were key to understanding Robin’s planning process and reflections about her own experiences facilitating the workshops, about learning to use and facilitate with the technologies, and about her observations and interactions with the participants. These sessions were also valuable for member-checking purposes. I used this time to ask Robin for clarification or verification about previously collected data where I was uncertain about my interpretation of events.

**Distance mentoring mini-case.** During initial planning of this study, I intended to select two other key informants from the pool of those participating in Skype and Bluetooth mentoring, hoping to observe distance mentoring in action. However, only one teacher expressed interest—Mike, an elementary school physical education teacher from Milltown. I obtained Mike’s permission to use him as a key participant in this study, and had planned to do the same with his distance mentor. In late January, however, Mike informed us that his principal was not going to allow him to participate in the distance mentoring. At this point the opportunities for observing
Skype and Bluetooth mentoring during this academic year flew out the window. However, it was also this situation that firmly established the need to understand how the district administrators experienced EdCentral’s induction initiatives, and I definitely needed to try and understand the Milltown principal’s perspective. As often occurs in a qualitative study, this event resulted in a major change in the data collection process.

Conveniently, the teacher who had piloted Skype and Bluetooth mentoring during the previous school year had also been employed in Milltown as the elementary PE teacher, the position now filled by Mike. Since direct observation and experience with Skype and Bluetooth mentoring would not be available during the 2010-2011 school year, I decided it best to use Milltown’s distance mentoring experiences as a mini-case, expanding the boundaries of the distance mentoring portion of this investigation to include self-reported experiences from the pilot year as well.

Extended interviews with Eric, Mike, their building principal, the building’s mentor coordinator, and the Milltown superintendent were conducted. The same semi-structured protocol (Appendix B) was used for Milltown’s interviews as would be used in other districts as well. The design of the protocol and its purpose in this study will be described in the participant interviews section of this chapter. It is important to understand at this point that Milltown’s interviews differed from the others in that I sought information about the experiences during the previous year as well, I sought Eric’s perspective even though he was no longer working in EdCentral’s component school districts, and these interviews placed a greater emphasis on the distance mentoring initiative. In addition, Milltown was the only district involved in this study that provided perspectives across all of the induction stakeholders.
This mini-case was vital to understanding the interplay between EdCentral and this component district—the communication structure internal to the district and with EdCentral’s induction program, the alignment of purpose between roles and between the district and EdCentral, and the local induction experiences in the district as they relate to EdCentral induction experiences.

**Beginning teacher and mentor surveys.** I wanted to know the extent to which the experiences of Milltown’s educators were similar or different from participants in the other districts. I began looking for breadth of information about induction and technology integration experiences through the use of a survey. A mentor survey (Appendix C) and a beginning teacher survey (Appendix D) were created using Survey Monkey™. Robin sent the survey invitation on my behalf to the 26 participating beginning teachers during the 2010-2011 school year. Because Robin only scheduled one mentor workshop and only two mentors attended, I needed a larger pool of mentors to understand their experiences with EdCentral’s technology integration. To meet this need, Robin sent the invitation for the mentor survey to the sixty-seven mentors who were mentoring during the 2009-2010 and/or 2010-2011 school years. All participants who completed the survey were entered into a drawing to receive one of four $25 gift cards from Amazon (i.e. two for beginning teachers and two for mentors).

The survey contained questions about the participant’s classroom assignments and personal demographics such as age and race to look for potential teacher or demographic characteristics that might relate to the rates of participation in induction activities, technology usage, or satisfaction ratings. One of my research questions sought relationships between prior experiences and experiences with EdCentral’s technology integration. I also wanted to know about how different people experienced EdCentral’s induction program. Group differences, such
as younger participants consistently indicating more technology use or more participation in EdCentral’s online activities, would inform the research questions just described.

The survey also asked questions about participation in, and satisfaction with, EdCentral’s activities, with the local mentoring program, and with general technology usage for personal and professional purposes. Participation questions sought to determine who chooses to attend which activities and what reasons are given for not participating in these activities. Whether missed sessions were due to schedule conflicts, disinterest in the topics, or lack of knowledge would help inform the research questions about participants’ experiences with EdCentral’s initiatives, about the impact of resource availability, and about the alignment of district and regional activities with teacher and mentor needs. Questions related to satisfaction were also related to the alignment of activities with participant needs and about understanding the experience differences between mentors and beginning teachers.

The technology usage questions were composed for the purpose of responding to the research question about how prior experiences with technology impacted experiences or satisfaction with EdCentral’s technology integration. For example, this survey question might determine that those participating in online workshops primarily were those who used technology more often for personal or professional purposes. Participation rates were low for both surveys with only five beginning teachers (19% return rate) and 18 mentors (29% return rate) completing the survey, preventing any meaningful tests of significance. However, the survey responses still provided valuable data that contributed to broadening the understanding of EdCentral’s induction and technology integration than I would have been able to obtain only from interviews and observations.
**Participant interviews.** Additional interview participants were recruited from across the region to provide comparison information beyond the Milltown interview responses and to provide more depth of understanding than what could be obtained from the mentor and beginning teacher survey responses. Participants were recruited from across the various roles impacted by and also impacting EdCentral’s induction program. Interviews or focus group participation was sought from mentors, beginning teachers, principals, and district superintendents.

The recruitment process for mentors and beginning teachers began with a survey item asking for volunteers to participate in interviews or focus groups. This process produced only one mentor and two beginning teacher volunteers, which was not too surprising given the limited participation in the surveys. As a result, I resorted to additional recruitment techniques, asking Robin to send an invitation to participate in the focus groups with the promise of providing food and sharing teaching and mentoring experiences with other EdCentral educators. When no additional volunteers came forward, we tried again offering food or gift certificates and allowing for online participation using GoToMeeting™. Still, no additional participants came forward. I then used publicly available contact information to make direct contact with new teachers I had met personally during EdCentral’s workshops. Lastly, I made direct contact with district superintendents and building principals from the schools that employed beginning teacher participants during this 2010-2011 school year in the EdCentral region.

In the end, I interviewed three beginning teachers, three mentors, three district-level superintendents or administrators, and two building principals in addition to the Milltown participants from each of these categories. Interview participants represented six of the nine participating 2010-2011 school districts. Adding survey data to this count, all districts that had
beginning teacher participants in the EdCentral program during the 2010-2011 school year were represented except for one.

The interview protocol (Appendix B) was structured purposely to be general enough to apply to mentors, beginning teachers, and administrators. As a semi-structured protocol, I could then tailor additional questions to fit the participant’s context, prior experiences, or to delve deeper into a particular response provided on the spot. The interviews were important for responding to all four of the research questions. The consistency of questions across roles and districts provided for role and district comparisons during analysis. The resulting comparisons between responses contributed to the research question seeking understanding of how experiences differed by participant role. The first question on the protocol asked the participants to explain their own understanding and opinion of the general purpose(s) or goal(s) of induction. This question and the question about the “fit” between the district’s local induction program and EdCentral’s program produced responses relevant to the alignment of EdCentral’s program with that of the districts, schools, and teachers. Questions about the knowledge of and strengths and weaknesses of the EdCentral induction program and their technology integration initiatives addressed the questions of alignment across districts and technology experiences. Issues related to resource availability or scarcity surfaced within responses to each of the interview questions at one point or another. However, one question specifically sought to obtain resource related responses and how the resource issues related to teacher induction. For this question, I presented the participant with two conflicting messages within the research literature, and I asked them how their experiences related to these claims. One side of the argument said that induction is not as necessary in small, rural schools due to the closeness of the community and support from all staff in the building (Harris, 2001). The conflicting argument said that induction is vital because
of the extreme isolation experienced when you are the only teacher of your subject or grade in the school or district (Hare, 1991; National Comprehensive Center for Teacher Quality, 2007).

While the participation rate for these interviews was lower than anticipated, the spread of representation across roles and districts provided a variety of perspectives that contributed valuable data to this study. The interviews contributed nicely to the developing themes and to my ability to triangulate the key findings.

**District profiles.** State and federal data accessible through the state’s school report card system, the National Center for Educational Statistics (NCES) database, U.S. Census data, and state and federal policies related to induction provided data necessary to create district profiles for each of the nine districts. These profiles contributed to the comparative analysis between groups such as small, medium, or large districts; districts closer or further away from EdCentral’s face-to-face meeting location; and districts with or without state approval for their local mentoring programs.

**Data Analysis**

Data analysis was continuous throughout the duration of the study. This iterative process began with a data collection event, like an observation or an interview. In my case it was a face-to-face workshop observation followed by a coordinator planning and reflection session. During the documentation process, I marked and commented within the text those sections that stood out to me as important for understanding this event or the people involved. For example, as I composed my field-notes from the first observation, I also reflected on the significance these activities had on the participants’ experiences. I noted that the activities included varying levels of interaction as well as missed opportunities to facilitate expanded networking amongst the participants. I also made note of comments from the session’s feedback activity that indicated a
preference for the small group activities and of Robin’s comment that she was surprised by the participants’ interest in interaction.

As more data were collected and reviewed for relevance to the study, some issues were evident across multiple data collection events where others appear only once. New data could contain new issues to explore while other issues became less relevant to the study. As a result, the list of issues and themes I maintained in my research journal was revised and previously collected data were reviewed once more to determine if the new additions were present during previous events.

Toward the end of my data collection process, my journal contained a set of themes and issues that had remained unchanged despite new data sources continuing to be added. This list became the coding scheme that I used across all of the data sources to help me sort, categorize, and then synthesize the associations evident in the data.

**Coding the evidence, in search of new understandings.** Using Atlas.ti® qualitative data analysis software, I began the formal coding process in mid-June after completing the final interview necessary to complete the Milltown mini-case. Even though a few additional interviews would still occur, I felt that the themes and issues would remain fairly consistent at this stage in the study. My purpose for coding was to separate the data into meaningful pieces and then to reassemble them in a variety of configurations, seeking both repetition and dissonance. Table 1 describes the coding framework that I used. The “source” column explains how I derived particular code families and how the codes relate to the research questions.
Table 1

**Coding Schema and Relevance to the Study**

<table>
<thead>
<tr>
<th>Code</th>
<th>Sub-code(s)</th>
<th>Source</th>
<th>Relevance to Research Questions</th>
</tr>
</thead>
</table>
| Role        | Mentor
Beginning Teacher
EdCentral
Principal
Superintendent
Researcher | First three were focal roles from the beginning of the study. Administrators were added after a principal stopped the distance mentoring process | Assesses how experiences differ by role                                |
| District    | D1-D12                                           | District characteristics like size, geographic distance from EdCentral, and state approval status of induction program were necessary when considering experiences across different districts | Contributes to understanding of program coordination across multiple districts |
| Resources   | Time
Funding
People
Tech access | Time and people were focal issues from the beginning based on literature. Loss of the grant added funding and Robin’s inability to host webinar due to spotty wireless access while traveling | Contributes to understanding how experiences are impacted by resource availability |
| Purpose     | Induction
EdCentral
District
New teacher
Tech integration | Knew of prior issues with coordination across multiple districts. Principal halting distance mentoring added concern about possible misalignment of purpose and roles in meeting teacher needs with technology integration and without | Assesses alignment across multiple districts and teacher needs |
| Communication | Inadequate
Misunderstanding | The issue of communication systems was initially evident in Robin’s frustration about not knowing who the mentors or experts are in the districts and continued to expand during interviews and surveys as evidence of misinformation of no information came to light | Responds to questions of coordination across multiple districts and relevant to varying role perspectives |
| Development | Program Dev
Tech Dev
Practice Dev | These codes were related to the process of learning new skills or information. Process of development was expected with new teachers, but the coordinators learning process was evident with both technology and program leadership. | Relates to questions about prior experiences with technology, about varying role perspectives, and |
|             | Tech Experience                                  | This code is associated with an original and unchanging research question seeking understanding about how other technology practices affect experiences with new or different technology uses. | Responds to the research question about effects of prior technology experience |

In addition to coding within the text using the codes above, my process of sorting and categorizing also depended on the dates when the data source was obtained and the type of data source (i.e. workshop observation, interview, coordinator planning, survey). In Atlas.ti®, the
individual documents were sorted into families of data according to the data type, and this could be used for sorting in a similar manner to that of the codes. By listing the data in chronological order within the program, chronology would provide the lowest level sorting structure within a particular query. For example, if I asked the analysis program for a report containing all text coded as “Communication” and grouped by subcode, the output would contain a section of “Inadequate” data chunks and a section of “Misunderstanding” data chunks. The coded pieces would be listed chronologically in each of the sections.

Surveys. The same coding process was applied to the mentor and beginning teacher survey results, but the process involved an additional step of preparation before it was coded. First the raw data needed to be summarized. The beginning teacher survey was distributed to 26 participants and five (19%) responded. The mentor survey went out to 63 participants and 20 (32%) were returned. The results of the surveys were compiled into a single summary document for mentor responses and one for beginning teacher responses. Descriptive statistics, primarily frequencies and percentages were calculated to summarize the quantitative questions, such as the percentage of mentors who missed one or more EdCentral workshops because they did not feel the content was relevant or the percentage of those with schedule conflicts. Narrative responses were listed together for each question with common themes grouped together.

Summarizing the technology usage questions was a little more complex. The respondents gave a frequency of use rating to a set of 13-15 internet-based tools. The ratings ranged from non-use (0) to daily use (5), and the question asked the respondents to consider their use over the previous two months. As a measure of each respondent’s personal and professional technology usage, I created a technology score variable that totaled a respondent’s ratings across all of the tools in that question. The overall mean and range were used to summarize these questions. Last,
even though I did not have sufficient responses for testing for significance, I did observe the data for patterns of interest. For example, I sorted the data by participant age to determine if the technology scores were also similarly ordered. Patterns that were or were not present were reported within the survey summary document. Then I used Atlas.ti® to code these two survey summaries alongside the observation field-notes and interviews.

Formally organizing the data in such a way made it easier for me to see the areas where my evidence was strongest and most credible, seeking triangulation from the multiple perspectives and multiple methods of data collection. Grouping the data in this way also made it easier to determine whether or not contradictory evidence was present.

**Considerations**

I am an advocate of the affordances of both induction and of internet-based communications, and I would like this study to improve future efforts to use technology for induction. However, I am also a skeptic. I know that change is hard, contextual, and complex. I expected nothing less of the experiences associated with EdCentral’s induction initiatives. “An understanding of what reality is from the point of view of people within the role is an essential starting point for constructing a practical theory of the meaning and results of change attempts” (Fullan, 2009, p. 55). I maintained a healthy skepticism throughout this study, not only by finding EdCentral’s challenges as interesting (if not more so) than the successes; but also consistently questioning my role within the study, both as researcher and as participant.

My unique position as Statewide Coordinator of SBE grant programs increased the likelihood of obtaining reliable data. I had an established level of trust with program leaders where they appeared to be comfortable enough to openly share their successes and their challenges with me. The community of grant-funded program leaders held research on their
programs in high esteem, and utilized research findings to inform future decisions. This study provided EdCentral’s leadership with the benefit of an external perspective. However, SBE funds did pay my salary as a support provider for the grants, and a part of INTC’s role included reporting the status of the grant-funded programs to SBE. Even though EdCentral was not receiving state funds during the duration of this study, it was still possible that Robin or other participants thought of me as an evaluator or someone who has an impact on grant-funding decisions.

It was important for me to continually question and reflect upon my dual role as researcher and as coordinator. Maintaining a journal helped me to wrestle with these issues, and it helped me to realize that the cancellations were a necessary part of understanding how new teachers and mentors experienced EdCentral’s induction activities that year. In addition, as I was feeling frustrated by a lack of survey responses and focus-group volunteers, despite offering remuneration for participation, I realized that there were possible explanations directly connected to the events of the study. As sessions were cancelled and fewer participants attended, I was losing opportunities to establish relationships with the participants. Only nine beginning teachers had been in physical presence with Robin or myself since early November; and now, five months later, Robin was sending them email messages requesting participation in these surveys and focus groups. I had expected that the request for participation coming from the coordinator of EdCentral’s program would encourage participation. However, further reflection and writing in my journal made me realize that Robin really did not have much more of a relationship with these teachers than I did.

I realized that my frustrations with data collection were echoes of frustrations about dwindling participation in EdCentral activities. I came close to being immobilized by my doubt,
fearful that I had insufficient data to complete this study. Instead, the doubt pushed me toward a deeper exploration of declining participation within the data that I had already collected (Stake, 2009). Because of my own part in the experiences with EdCentral, my journal and my reflections embedded within the study’s field-notes and transcripts were also a part of the data included in the coding and analysis process.

Limited participation was part of the experience necessary for understanding EdCentral’s efforts to integrate technology into a fledgling induction program serving multiple and varied rural districts. By gaining an experiential understanding of how things worked with this particular case, the level of complexity became increasingly clear, producing new questions that led to my digging deeper. Research in this field of technology-based initiatives for induction of beginning teachers is in its infancy, and it needs multiple case study contributions before patterns of consistencies and inconsistencies begin to emerge across studies and across initiatives. The contribution that this study made is embodied in the depth of understanding it provided regarding the complexity of forces—both inside and outside of the control of program coordinators—that influenced participation, satisfaction, and the potential for learning. In the next chapter, I tell the story of EdCentral’s induction program, led part-time by the retired educator and technology enthusiast, Robin. It is a story of innovative potential that suffered from the challenges of implementing change in complex systems with limited resources.
Chapter 4
Realities of Facilitating Innovation

What was it like to be a part of EdCentral’s efforts to integrate technology into its induction program? EdCentral’s induction coordinator, Robin, provided the focal perspective for this study, and the perspectives of beginning teachers, mentors, and district administrators provided comparative lenses. Rarely do studies of a particular program seek understanding of coordination and participation simultaneously. This chapter summarizes the findings that resulted from multiple data sources collected over a nine-month period. The primary data sources included:

- Participant observer field-notes from all five of EdCentral’s Just-in-Time sessions for beginning teachers (two online and three face-to-face) and an online session for the active mentors in the region,
- Field-notes and transcripts from nearly 10.6 hours of co-planning and reflecting with Robin and Beth, as well as email exchanges for the same purpose,
- Transcripts or field-notes from 14 interviews with administrators, mentors, and beginning teachers associated the EdCentral’s induction program, and
- Responses to the completed beginning teacher (N=5) and mentor surveys (N=18).

Rather than reporting the findings from each data type separately, this chapter is organized around each of the key components that comprised EdCentral’s induction program and related contextual issues. I begin by providing background information related to policy, location, history, and general practice of EdCentral. I then provide vignettes and other data associated with EdCentral’s primary induction components (i.e. face-to-face workshops for beginning teachers, online workshops for beginning teachers and for mentors, and the distance mentoring initiative).
Lastly, I describe contextual findings related to participants’ technology usage and the alignment of purpose across individuals and organizations connected to EdCentral’s induction program. By presenting the data in this manner, the relationships between the multiple data sources are easier to examine and better illustrate the triangulation of key issues across multiple perspectives and data sources. The findings are not reported in a chronological manner, which could potentially be confusing for those who were not present during these events. Table A2 in the Appendix provides a chronological listing of the major events associated with EdCentral’s induction program.

**History and Context**

EdCentral is a professional development cooperative providing services to three Educational Service Agencies (ESAs) covering a combined region of six, primarily rural, counties and a total of 48 school districts. Administrators and mentor teachers across the region primarily described their past experiences with EdCentral’s staff and services as reliable and of high quality. Milltown’s superintendent said,

I’ve known Beth and Lisa for many years. I actually had Lisa come down and talk to our principals when we did our administrative retreat. That was two summers ago when I was in a different district which is still part of EdCentral’s service region; and anytime Beth or Lisa send something to me, I know it’s going to be a good program and will benefit our district.

There was one exception within the interviews I conducted. A superintendent of a large unit district expressed uncertainty about EdCentral’s services. Being a larger district, he said that they took care of much of their professional development internally, and his Director of Professional Development handled these matters. In addition, his district was located on the western fringe of
EdCentral’s service area, bringing them close to a neighboring professional development cooperative. He reported interacting more with superintendents and districts within that neighboring region.

Induction services were not new for EdCentral. Beth, Assistant Regional Superintendent for one of the three ESAs served by EdCentral and also the Director of EdCentral, had been a longtime advocate for teacher induction. She participated on the development team of the state-subsidized mentor training curriculum that ESAs across the state use to provide training to mentors, administrators, and induction coordinators. Beth and EdCentral’s professional development consultant, Lisa, led these trainings for EdCentral’s consortium of school districts in the years leading up to EdCentral’s receipt of the SBE-funded grant for teacher induction.

In addition, as a part of Goals 2000 funding, EdCentral used to provide afternoon networking sessions for new teachers on a quarterly basis. These sessions were known as Project TNT, which stood for Teachers Networking with Teachers. Beth reported that district administrators encouraged attendance at these sessions; and despite the Goals 2000 funding ending, these sessions continued to be well attended in the years leading up to EdCentral’s receipt of its induction grant from the state.

**State grant.** In 2006, the state legislature added a line item to the state budget specifically for teacher induction. The funds committed to new teacher support were insufficient for statewide funding of induction, so the SBE established a competitive grant process to support the development of quality programs that would become models across the state. As funding allowed, additional grants were awarded—gradually growing the cadre of grant-funded programs from the initial 10 programs funded in 2006 to the 67 programs funded in 2009. EdCentral was one of these programs initially funded through the 2009 grants. The grant-funded programs
represented a wide range of program sizes, geographic regions in the state, organizational models, and stages of development.

EdCentral’s 2009 grant proposal for SBE-funding described the intended purpose for their induction program:

Through participation in this Pilot, districts and EdCentral share resources and build internal capacity to meet the needs of program participants. Because some districts may only have one to two new teachers, by joining with other districts in the region, the new teachers will have access to increased support and resources as they navigate the first years of teaching.

EdCentral used approved grant funds to continue providing mentor and administrator training as they had in the past. In addition, the grant paid for a part-time coordinator to provide just-in-time workshops for the beginning teacher focused on general pedagogy such as classroom management and parent communication. It also provided funding for participant stipends.

In addition, the coordinator worked with the districts to formalize their local mentoring programs, and districts received some of the grant funds to develop these local supports. Fourteen districts signed-on to participate during the first year of the grant with the agreement that they would develop a formal mentoring program and apply for state approval.

The teacher induction program was just one of many professional development offerings through EdCentral, but induction was the only initiative that was led by someone hired solely for this purpose. Where the other staff at EdCentral split their time between differentiated instruction, instructional coaching, reading across the content areas, and technology integration, Robin was hired part time with the SBE grant funds for the purpose of running EdCentral’s induction program.
Robin’s background. Robin was hired as the coordinator of the induction program after being full-time retired for five years. Beth selected Robin for this position because of the work they had both done as coordinators of professional development schools (PDS) for a state university’s teacher education program. This PDS experience involved coordinating preservice teacher and veteran cooperating teacher matches and training. In addition, they coordinated induction for the new teachers in these schools. One primary difference, however, was that EdCentral’s program required coordination across multiple districts rather than a single district.

Initial technology integration. During the 2009-2010 school year, Robin and Beth initiated EdCentral’s technology integration to provide more workshop opportunities without the travel time and costs. In addition, Beth read about the use of Skype and Bluetooth headsets for conducting observations across a distance (Rock, Gregg, Howard, et al., 2009) during that first summer and excitedly brought this idea to Robin, imagining this as a solution to the rural school challenges of finding content-area or grade-level mentor-matches for the beginning teachers in the region.

In Spring 2010, Robin hand delivered webcams to each of the 14 participating districts so that mentors and beginning teachers could attend EdCentral’s online meetings. The platform, GoToMeeting™, allowed real-time audio and screensharing via an internet connection. In addition, Robin piloted the distance mentoring process with Eric, a beginning PE teacher in the Milltown school district. This process used Skype videoconferencing software with the beginning teacher’s webcam pointed toward the classroom so that the mentor on the other end of the videoconference could see the classroom. The beginning teacher wore a Bluetooth headset that allowed the mentor to hear the beginning teacher’s interactions in the classroom. In addition, the mentor could whisper discretely in the ear of the beginning teacher. However, as a result of
this pilot project, Robin determined that it was best if she did not speak directly to Eric while he was teaching. Instead, the Bluetooth headset allowed Robin to hear Eric’s interactions with the students, and she used Skype’s text-chat to provide written feedback, questions, and suggestions that Eric could then read at his convenience.

**Loss of grant funding.** Just as EdCentral received its first round of grant funding, the state’s budget cycles saw significant decreases in the line-item for induction and across education in general. In addition, the SBE modified the rules for the grant programs to ensure that mentors were appropriately compensated. Where previously mentors were required to meet with their mentees for 1.5 hours per week, the new rules now required that every mentor provide 60 hours of contact with his or her mentee per year and that the mentor receive a stipend of $1,200 from grant funds. During the 2010-2011 school year, the number of grant-funded programs fell to 46 due to a combination of rule changes and funding reductions. Data collected by the INTC indicated that these policy changes impacted multi-district induction programs to a greater extent than the single district programs with a greater proportion of consortia choosing not to apply for continuation funding (Brady, 2011).

EdCentral was one of the multi-district programs that dropped out of the state’s funding stream that year. The combination of a 20% decrease in their grant funding allocation and the new administrative rule requirements resulted in Beth and Robin’s conclusion that they could not find an equitable way to meet these new requirements while also functioning under a reduced budget. The grant funds were insufficient to cover all of the required mentor stipends, and they felt it would be unfair to provide grant funds and services to only some of the schools while leaving others to fend for themselves.
Despite the loss of grant funding, Beth and Robin decided that they needed to finish out the year with the beginning teachers who had already attended the early August workshop. Robin’s part-time salary was reduced and came from other EdCentral grant funds. Robin planned for four face-to-face Just-in-Time sessions for the beginning teachers. In addition, EdCentral planned to continue online workshops for beginning teachers and for mentors with the first session scheduled for beginning teachers in September. Lastly, plans continued moving forward for developing the distance mentoring process using Skype.

**District involvement.** The districts were left to fend for themselves, yet many districts continued offering formal mentoring programs supported by local funds. Of the nine districts with beginning teachers enrolled in EdCentral’s induction program during the 2010-2011 school year, only one school district decided not to provide its first-year teacher with a mentor. This particular teacher reported that the district sent a couple teachers to receive mentor training in August, but they were pulled from the training when district leaders learned that the state’s grant funds would no longer be available. Most of the participating districts were small to medium sized as defined by the SBE. One large district was involved during this year. This large district’s induction coordinator offered EdCentral’s Just-in-Time sessions to their beginning teachers as an optional addition to the district’s own, internal program.

Even though the majority of districts provided mentoring for their beginning teachers, the districts varied in how the local program was implemented. In Milltown, a medium-sized elementary district with two buildings across-town from one another, the district superintendent and two mentor leaders provided oversight of the program by meeting quarterly to discuss successes, challenges, and plans for the next quarter. In Countryside school district, a rural one-building K-12 district, the superintendent knew very little about the details of the district’s
induction services. Instead, Countryside’s high school principal took responsibility for the program’s format and scheduling but depended heavily on one of the mentors. “One of our mentors who really helped me and got the ball rolling . . . She’s really the go-to person.”

**Discussion.** This first year of providing services despite the loss of state funds was the year that I documented the experiences of those involved in EdCentral’s induction program. Within this context, three forms of capital framed EdCentral’s induction initiatives. The SBE grant provided the funding to hire Robin and to broaden EdCentral’s induction role in the region, yet now those grant funds were gone. Robin’s social connections with Beth, as well as Beth’s awareness of Robin’s strengths led to Robin’s coordination role. Lastly, as seen in EdCentral’s grant proposal, cross-district collaboration allowed sharing of resources across district lines through distance mentoring using Skype and Bluetooth. Economic capital, human capital, and social capital set the stage for this study, and they continued to play key roles throughout the 2010-2011 school year.

**Workshops**

**Face-to-face for beginning teachers.** Robin provided four face-to-face sessions for beginning teachers. I was able to attend three of these as a participant observer. The sessions took place in the Kinsdale School District Board Room from 4:30-6:30pm, with a few teachers needing to drive a full hour from their home schools in order to attend. While the focus of this study was on EdCentral’s internet-based activities, it was important to understand the face-to-face experiences as a basis for comparison and as context for the online initiatives. Each session followed a similar pattern of events.

**Introductions and sharing.** As the teachers arrived, between 4:15 and 4:40pm, they signed in and picked up the handouts stacked on the table just inside the door. They then sat in
pairs at rectangular tables facing the projector screen. The tables were always arranged in two columns with five to six rows and an aisle between the two columns. As the teachers waited for the meeting to begin, they sat silently checking messages on their phones or skimming through the handouts. This lack of interaction was especially true during the August 31 session, even for the new teachers who had carpooled to the meeting. In October and November, participants from the same districts sat together and socialized prior to the meeting’s start, but rarely did conversations arise between teachers from different districts during this pre-meeting time period.

When it was time to begin, Robin would make a few introductory remarks and then participants paired-up to discuss their experiences related to the evening’s topic of discussion. In August, they shared their successes and challenges of the first days of school; in October it was about parent interactions; and November’s session focused on technology usage in the classroom. Even when Robin’s instructions asked them to partner with someone they did not know, the participants primarily turned to their table partners regardless of whether they were sitting with peers from the same school.

This initial activity lasted between five and ten minutes. Then Robin pulled the group back together for whole-group sharing, and the teachers took turns sharing their experiences with the larger group. Robin often responded with suggestions for coping with the challenges or with words reflecting empathetic understanding. For example, when a business education teacher expressed frustration with his AP class because they were supposed to be good students but they would not listen and participate during his last hour class; Robin responded, “I was a business education teacher. Let’s talk and maybe I can offer some project ideas that you can use.” In October, the sharing of experiences focused on initial experiences with parents:
New Teacher: We [teacher pair] talked about our Open House experiences, and how
surprised we were that the parents attended in torn jeans and ripped T-shirts. One student’s mom was even pretty obviously drunk.

Robin: How did this interaction impact how you will interact with that student in the future?

New Teacher: I definitely have a better understanding of why the child is the way she is.

Robin: Unfortunately in education, we need to take care of their basic needs as well as help them to learn.

Despite occurring in a large group, these sharing sessions were primarily paired interactions with the beginning teacher sharing an experience and Robin responding. In reviewing transcripts and field notes, I was only able to find one example of a large group conversation where interactions occurred between multiple beginning teachers rather than the usual two-way dialogue between a single new teacher and Robin. This broader conversation occurred during a discussion about interacting with families:

New Teacher 1: [turned around facing the participants behind her] I would just recommend for other high school teachers, that when you call home, be sure that you are talking to the parent and not the student. I am pretty sure that I had a lengthy conversation with one of my students as he pretended to be his Dad.

New Teachers 2 and 3 simultaneously express a preference for using email.

New Teacher 4: Yeah, but not all families have access to email.

Robin: Letters or newsletters home could work as well. [Directs her attention to the next pair of new teachers to share their experiences]
Small group activities. Every face-to-face Just-in-Time session also incorporated one or two small group activities that used a condensed version of the jigsaw strategy. Robin either had group members divide a relatively long reading amongst themselves and then share the key points of the assigned section with the other members of the small group, or she assigned each group something different to discuss, like an instructional strategy description or tool. A spokesperson for each group would then share-out the highlights of the small-group discussion with the large group.

Face-to-face feedback. Engagement was highest during these small group and paired activities. Session feedback forms also indicated enjoyment of these activities. For both the late August and the October sessions, the highest average scores were given to workshop organization and the opportunities to discuss, apply, or critique the session’s content. Across all three face-to-face sessions, at least a couple participants indicated that opportunities to interact with their peers were the best feature of the workshop. In August, 14 of the 17 participants who completed the evaluation form expressed this sentiment. However, this August feedback also contained three workshop critiques requesting more to the point instruction, fewer group activities, and a wider variety of activities as opposed to just small group activities that require producing a poster for sharing with the larger group.

Two of the four beginning teachers I interviewed expressed satisfaction in EdCentral’s face-to-face sessions because it was reassuring to know that they were not alone, that others were dealing with challenges similar to their own. Listening to others share their experiences during these introductory pair-share activities provided opportunities for teachers to empathize with

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5 Jigsaw is a cooperative learning technique developed by Elliot Aronson and his students in 1970 (Aronson, 2000). This technique involves assigning participants to expert groups where the members of this group learn about a specific topic. New groups are formed containing one member from each of the expert groups. Each expert in the group then shares his or her expertise, or piece of the puzzle, with the rest of the group.
others. This did not appeal to everyone. One principal reported receiving feedback from a new teacher in her building indicating that he did not enjoy listening to the problems of others when these issues were not relevant to his own situation. This feedback from the principal was second hand, and I was not able to interview this particular beginning teacher for verification.

Participation in EdCentral’s beginning teacher activities dropped rapidly between August and January. The final Just-in-Time session in November had nine beginning teachers in attendance as compared to the August 31 session with twenty-one teachers attending. Following the November Just-in-Time session, Robin said that they were no longer coming because they found out that they did not have to attend. When I asked her how she knew this, she told me that she had received multiple emails from new teachers asking if they had to attend the Just-in-Time sessions. Robin responded that attendance was optional because she felt that the loss of grant funds meant that districts were no longer obligated to participate.

Of the five beginning teachers who completed the online survey (19% return rate), all participants had attended at least 75% of face-to-face sessions, and on a three-point scale regarding the benefits of these face-to-face sessions, the average rating was 1, or slightly beneficial. Increasing the content-specific or curriculum related material was suggested as possible improvements. The survey participants included five of the nine total participants who attended the November session. Those who stopped attending EdCentral’s activities were not represented in this survey sample nor did they participate in the interviews.

The only data available representing those who stopped attending EdCentral’s activities were relayed through secondary sources. For example, during an interview with one of the beginning teachers represented in the survey, he referenced the perceptions of at least one of the beginning teachers who had stopped attending:
I know that I got something out of it, but I know that [name of another beginning teacher]’s complaint was that it was too much like a college course, like a lecture. Like we did the same activities that we had done in the previous 4 years in college.

An administrator from a different district described hearing similar concerns, but he was unconcerned by these complaints. “The way I see it, some things are important enough to hear more than once,” he said.

**Discussion.** In summary, the face-to-face sessions provided opportunities for expanding a professional network of beginning teachers beyond the boundaries of their own school districts. However, when given a choice, those who attended with teachers from the same school chose to sit together and partner with one another during introductory activities. Within the small-group, jigsaw activities, the beginning teachers were able to share their own knowledge and expertise with one another around the content of a particular article or document. However, in the large group activities, Robin was the source of nearly all expertise, or human capital in the room. Direct and indirect feedback reflected mixed reactions to the level of interaction and depth of knowledge gained from participation. Participation in the face-to-face workshops decreased over time, and Robin felt she could not enforce attendance given the lack of grant funding.

**Online workshops.** On August 31, Robin ended the face-to-face session by preparing the beginning teachers for the online session that would occur the following month. “Who has located the tech person in your school?” All of the participants raised their hands. “How about your school’s webcams?” About a third of the hands went into the air. A single camera had been hand-delivered to each district that participated in last year’s induction grant, and it was up to the new teachers to locate this equipment.
“If you will take a look at the blue handout, our next meeting will occur using GoToMeeting, and you will need to do some preparation beforehand.” The checklist included locating the necessary equipment, talking to the technology contact in the building about Skype and GoToMeeting™, and testing the equipment using Skype with a partner. I was standing up front with Robin as she explained this to the group during the final 15 minutes of August’s two hour session. As I looked out at their faces to gauge reactions, I saw some blank stares, some drooping eyelids, some elbows on tables with chins resting in their hands. They looked so tired to me. As I was noting these tired, blank expressions, Robin must have also been reading the body language, only her interpretation differed from mine. She said, “No need to look so apprehensive. The good news is that you won’t have to drive to the session.” This brought a few smiles and nods. She also added the reassurance that each district’s technology staff received training last year for the online workshops that use GoToMeeting™.

The next day, I asked her about the source of her apprehension interpretation. She said, “Maybe I was just seeing their tiredness as apprehension. It was their blank expressions that I interpreted this way.” Even though I had interpreted the participants’ facial expressions as looks of exhaustion, I did find myself wondering whether or not I had misinterpreted. Was there some apprehension here as well? Completing the checklist for preparation would take some additional time and energy on the part of these teachers who barely had a week of classroom experience under their belts.

**GoToMeeting™ versus GoToWebinar™.** When I met with Robin on September 1 for an initial interview, I asked her what she had planned for the September online session. She had not decided exactly what she would be doing for that session, but she planned to schedule a practice session with GoToWebinar™ since this was a new tool for her. During the previous year, she
had hosted the online Just-in-Time sessions using GoToMeeting™, but decided to move to the provider’s webinar platform instead. She liked the polling tool that provided the ability for the participants to respond to a multiple-choice question and then view the results in a graph. GoToMeeting™ was intended to be like a virtual conference room where GoToWebinar™ was intended to be like a virtual lecture hall. Where GoToWebinar™ could seat 100 participants, GoToMeeting topped out at a maximum of 15—another reason for Robin’s switch to a new platform. I offered to assist with planning and asked to participate in any practice sessions. I had experience from my INTC work with both GoTo™ platforms, and I looked forward to collaborating.

**Postponed due to access.** Ten days prior to the September 28th online session, I wrote in my journal,

I’m getting nervous about whether or not I’m receiving all program communications sent by Robin. She indicated to the beginning teachers that she would send them an assignment related to the parent communications content she was unable to cover during the last Just-in-Time session. She indicated at that time that this assignment would involve posting to the blog, but I haven’t heard anything about this. She also indicated that she needed to practice using GoToWebinar since it was new for her, and she agreed to let me participate in these practice sessions. The Webinar is just a little more than a week away, and I haven’t heard anything about either of them.

On September 19th, I sent Robin an email asking whether or not I had missed any communications and if she would like to set a date for a practice session. I shared my excitement about the timing of the online session because I was going to be in the EdCentral area for an INTC differentiation workshop. This would allow me to participate in the online session on-
location with the teachers from Milltown. She responded the next day that internet reception had been spotty while traveling out of state, and it was difficult to get work done while on the move. She was therefore going to cancel the new teacher online session. In addition, some of the new teachers had contacted her to indicate that they would not be able to attend EdCentral’s session because of the differentiation workshop. “It’s too much in one day,” she said.

**Practice session.** Robin invited me to a GoToWebinar™ practice session scheduled to take place the week she returned home from her travels. On the scheduled date, I logged into the online system five minutes before the scheduled start time, using the link that arrived in my email. Robin was already logged on, so we chatted about her recent travels. The audio was a little choppy, dropping a syllable here and there, but I could still comprehend what she said. A colleague from EdCentral joined us, and Robin provided introductions along with a thanks for helping her out. Her voice was distorted, and the colleague said, “Your voice sounds like it is coming through a synthesizer.” Robin’s audio was getting worse and more difficult to understand. “Hmmm. I’m sorry,” she said. The connection improved after some unused programs were closed on our computers, but Robin’s voice was still choppy. Robin’s colleague said that she could hear me fine, and I agreed that only Robin’s audio sounded problematic for me. Robin later told me that on her end our voices were choppy, and occasionally she would lose us altogether.

Robin said, “Well, let’s go ahead and try this.” She opened a poll that asked us to indicate whether or not we had ever participated in an online meeting or workshop. I selected “yes” with a click of my mouse and pressed the “submit” button. After a pause of a second or two, Robin said that she could see that I had voted; and then another pause before seeing the second poll vote. Her audio quality was getting worse. I asked her if she was using a wireless connection or
if she was using an Ethernet cable, but she did not respond. I do not think that she heard me.
Instead, she apologized for wasting our time and said that she had tested what she wanted to try.
She was glad the poll was working, but sorry about the audio quality. “I guess I need to go to my
technology contact to figure out what’s going on.” She laughed because her technology contact
was her son who also provided technology support for EdCentral. Her colleague joined in with
her own giggle, saying that her contact was definitely a good resource. We said our good-byes,
ending the short, ten minutes of practice. Robin sent another apologetic email immediately
following, “I’m sorry about wasting everyone’s time! But, now I know.”

I thanked her for letting me join the session, and reassured her that there was no reason to
apologize. This is what practice sessions are for, to iron out the kinks prior to the presentation.
“I’ll gladly do it again, and again, and again if it helps,” I said. However, no other practice
occurred prior to the first beginning teacher online session.

The only conversation we had about the practice session was that her son had
successfully diagnosed the problem. Her notebook computer’s wireless card offered insufficient
bandwidth for a reliable enough connection to host an online meeting. EdCentral had purchased
this notebook computer specifically so that she would not have to use her personal computer for
work purposes. “It looks like I will be using my own computer after all,” she said.

October meeting online. Robin re-scheduled the online Just-in-Time session on
October 28. I joined the webinar session from the empty meeting room where I had spent the day
conducting a training session. I logged into the online meeting room 10 minutes early and other
beginning teachers were starting to arrive as well. The welcome message displayed on my screen
asked participants to introduce themselves to the group by typing their names and where they
were from into the “chat window.” However, my GoToWebinar™ control panel did not contain
a “Chat” window. Instead, I saw a “Questions” window. In the GoToWebinar™ system, only the organizer can see what is posted in the questions. However, in the GoToMeeting™ platform that Robin used last year, something posted in the chat window could be seen by all of the participants. To confuse matters even more, the event organizer’s control panel that Robin was seeing had both a questions and a chat window, so she assumed that participants did as well.

Robin verbally welcomed individuals, and this was how I knew who had arrived. She asked us if we could see the welcome message in the chat window. She unmuted participants as they arrived, and participants sounded off regarding where they were from and who was in the room. Robin told us that Milltown was present, but she is having trouble unmuting them.

New Teacher: I don’t see the chat window.

Robin: Can you see where my cursor is located? [The window I see that contains her powerpoint slide shows a cursor arrow wiggling on the right side of the window] This is the chat window.

Me: [un-mute my microphone] Robin. We can’t see your control panel in our displays. Only your slides.

Robin: Oh, umm.

A beginning teacher then joined the conversation to describe how to use the arrow tool to view and hide our own control panel so that the questions window could be found.

This was not the first time that a beginning teacher participant came to the rescue during an EdCentral online session. Robin had described to me how the first meeting during the previous school year suffered from audio feedback loops. This occurs when the audio coming out of a computer’s speakers feeds directly into the computer’s microphone. The delay between when the sound enters the computer’s microphone and then exits the computer’s speaker is such
that an ongoing echo continues until the microphone is muted. One of the beginning teacher participants knew to tell the others to mute their microphones when they were not speaking.

*Presentation.* Thanks to so many of the beginning teachers logging into GoToWebinar™ early, Robin was able to officially launch the meeting just two minutes after its scheduled start time. She began with the announcement that GoToWebinar™ was new for her, “I’m just learning, so hang in there with me. I am going to mute you all again while I begin the meeting. You can use the chat window if you need to ask a question.”

For the next 10 minutes, Robin navigated back and forth between her PowerPoint® presentation and her internet browser to share three websites. First, she exited the PowerPoint® presentation and then opened her internet browser from the docking tray where it opened to display her credit union’s website. She apologized and navigated to the ePals website while describing that the website’s purpose. GoToWebinar™ provides a pause button that allows the presenter to freeze the participants’ view while navigating to the next window, but Robin had not learned how to use this facilitation tool. She quickly scrolled through the ePals website—highlighting the list of new classrooms that joined ePals that day, using the Projects tab to open the list of *National Geographic* projects, and pointing out the teachers tab and then the forum tab.

“OK, I’m going to unmute you all. Do you all have any questions?”

No response.

“Hmm. Lara, do you know why I can’t unmute some?”

I tell her that after she unmuted me, that I re-mute myself if I am not speaking. “Am I one of the one’s you can’t unmute?”

No response. Does this mean that she can’t hear me?
Robin apologized to the group. I was unable to see what she was struggling with, and I felt helpless due to my inability to assist.

“Well—hearing no questions, let’s go on.” She navigated away from the internet browser and back to the PowerPoint® where she opened the slide that said “Skype” along with an image of the Skype trademark and the web address. Robin asked if anyone uses Skype, and a male participant said that he uses it with his sister in California. A participant from the Countryside group started to say something, and then we heard her say, “Shoot, we aren’t unmuted!”

Robin continued, “OK. A couple of you have done this.” She navigated away from the PowerPoint and back to the internet browser to display the webpage for Skype. “You need to download this in your classrooms and try it out with a partner.” Then she opened the PowerPoint® presentation again.

The final web tool that Robin highlighted that night was TimsWeb, which is an acronym for Teacher Induction and Mentoring System on the Web. This tool was built for induction programs to use for the electronic tracking of a beginning teacher’s and mentor’s progress toward meeting the induction program’s requirements for professional development and contact time.

Robin said, “You should have received an email with instructions for how to log in.” She logged into the TimsWeb website and paused as it loaded. Then she hovered her cursor over the menu of options. “Umm. You’ll need to log in and create an account.”

She clicked the “Teacher” link in the menu.

The page was blank. The blank “Teachers” page meant that Robin either had not had the opportunity to enter the teacher accounts or that the list of teachers does not display until the beginning teachers verify their information. She quickly moved on by clicking to the reports.
page that displayed a small list of possible reports. She explained that she can generate reports from the information they enter in their online contact logs.

“OK,” she said. “I wanted to highlight the use of TimsWeb, but I am only able to display the Coordinator’s view.” Pause. “OK—not the best demonstration of TimsWeb,” she said. I am feeling empathy for her frustrations and wishing that we would have had another practice session to prepare for today.

*Closing activity.* Robin continued, “I’m going to try the poll feature now.” A yes/no question appeared on my screen, “Did you have any troubles preparing for today’s session?” I mark my answer and then submit.

After a pause, Robin said, “OK. I see 100% have voted. I’m going to try to show you the results.” Pause. “Can you see the results?” A bar graph appeared on my screen indicating that most did not have any troubles preparing for today, but a few did.

“Lara, I feel like this was pseudo OK. What do you think?” Robin asked.

Surprised by the question, I found a number of thoughts running through my head about the need for more practice, the limited opportunities for active engagement, and personal feelings of helplessness wishing that I could have been onsite with the Milltown teachers where I might have been able to assist with the inability to unmute them. However, taken by surprise, I could not think of a feedback response that would be useful or one that would increase the participants’ level of interaction. “Seems to be working OK,” I replied.

Robin said, “The difficulty is that I can’t see what you see.”

She told the teachers about the homework they needed to do if they wanted to receive Continuing Professional Development Units (CPDUs) and then opened the floor for questions or topics of their choosing.
No one responded, so she thanked everyone for coming and closed the meeting just twenty minutes after it had begun. She announced aloud whenever she saw a name disappear from the list of attendees, indicating that the person had left the online session.

Coordinator reflections. Once she thought that everyone had signed-off, she said to me, I don’t like GoToWebinar as much as I like GoToMeeting. I miss the ability to chat and I don’t have the same capabilities. I don’t know. I’m still learning it and maybe I’d like it more once I’m used to it. That’s the problem though. I don’t have an unlimited amount of time for practice.”

As I was responding about pros and cons I found in both systems, Robin and I lost our connection. I do not know how long I was talking to no one. I received an immediate email from Robin, “It’s GoToMeeting from now on!”

My reflections. In comparison to the Just-in-Time sessions that occurred face-to-face, the format of this online session differed quite a bit. The online session lasted just under 30 minutes where the face-to-face session was two hours long. Introductions still kicked off the session, but there were no sharing of experiences other than when Robin asked who had experienced using Skype and polled them about their session set-up experiences. There were no opportunities to read or explore new content during the session, but participants did have a homework assignment that they needed to complete individually in order to earn their CPDUs for participating. This individual assignment provided time for individual exploration of the ePals website and reflections about how the teacher might use it in their own classrooms.

It appeared that the online webinar included few opportunities for participant interaction and engagement. A few days after the webinar, Robin and I discussed the webinar experience; and I told her about my reflections that surfaced during my three-hour drive home following the
webinar. In brainstorming ideas for increasing participant interactions, I suggested that maybe the ePals portions of the agenda could allow participants some time for their own exploration. Then each participant could share with the rest of the group one interesting thing that was found on the site. This suggestion led to an important conversation about the challenges of leading these online sessions for the beginning teachers and mentors.

Robin: I’m still learning how to run these meetings.

Me: I know what you mean. I often feel like a beginning teacher when trying to provide online learning. I think about how I know I want them to have interactions because that’s how we learn. I then have to think about how that’s possible online, and then I have to figure out how to make it run smoothly. It takes so much.

Robin: I know I’m probably not using these opportunities as best as I can, but I’m also very cognizant of time. This is not a full-time job for me, so I know I haven’t done my best job, but I’m not able to do but so much. I feel much sympathy for the beginning teachers and their mentors, and don’t want to take up too much of their time, either. I feel the need to protect them. They are frazzled. I try to keep it simple for them without them needing to do too much or get overwhelmed with something new. You notice I’m very protective of them. I spent a lot of time with TimsWeb and the other software to learn how to use it. I probably need to spend more time with Webinar to learn its functions.

Learning the new software took time, and Robin felt she was devoting all the time she could allow for this process. Hearing Robin’s concerns about time and wanting to try increasing the active engagement of participants, I volunteered again to help with the planning for the
upcoming mentor session and for future sessions. Robin expressed reluctance “to do this to me,” but I told her that it was the least I could do. I knew how challenged she was regarding time, and I wanted to help take something off her plate. We split the session responsibilities for the upcoming mentor session.

 (**Online session for the mentors.**) The online session for the mentors mirrored the previous beginning teacher webinar. I suggested that we both open a Skype session to demonstrate its use, and Robin said, “It’s worth a try. Let’s see what’s what when we log into the mentor GoToMeeting.” My gut told me to request a quick practice session to see if we could do this successfully, but I was also acutely aware of Robin’s concerns about time. I practiced using Skype with my husband and tested whether or not I could Skype during a GoToMeeting™, but I did not ask Robin for any additional time. This was a mistake. Robin had not accepted my Skype buddy request beforehand, and she was not able to find my buddy request during the GoToMeeting™. This meant that I was unable to initiate the video-call to demonstrate to the mentors the ease of Skype.

Robin also pointed out afterward that the Skype interface on my Mac looked different than what she saw on her Windows machine. I did not consider the differing versions while planning. If we had practiced, Robin would have pointed this out prior to the session with the mentors. Knowing how to use Skype or how to use a particular website did not transfer into successful online presentation of these tools and resources.

Only two mentors were in attendance, and only one had access to a microphone. The group was small and these two mentors did not hesitate to ask questions or to comment about the material being covered. Because Robin used GoToMeeting™ this time, the mentor without the microphone was able to use the chat window to communicate with all of the participants. Had
this been GoToWebinar™, only Robin would have had access to his running comments. He shared his interests in using technology like Skype in his classroom to accompany the design projects and competitions that his high school physics students already participate in. However, this same teacher also typed, “I would really like to have broadband access in my classroom for things like this.”

Mentors from Countryside and Milltown had expressed interest in attending this webinar, but were unable to attend due to their district’s parent-teacher conferences being held on the same day. A second date was set for December to accommodate their schedules, but this session was cancelled due to lack of interest. An interview with a Milltown mentor confirmed that she wanted to attend, but that school related conflicts prevented her from doing so.

**Winter session for beginning teachers.** A second online session was planned for beginning teachers in early December that also had to be cancelled due to lack of enrollment. It was rescheduled for mid-January. I took full planning and implementation responsibility for this session with the intention that Robin’s time could be freed to focus on the distance mentoring initiative. This session focused on the New Year and was attended by three participants who took turns sharing their own successes from the first semester. When they had finished sharing, I opened the floor for them to ask one another questions. With no response, I asked a follow-up question of each participant, hoping that this would prompt participant questions. It did not.

As I reflected on this later, I realized that each shared success was specific to that teacher’s position. Would a kindergarten teacher be interested in learning more about a sixth grade teacher’s development of useful assessments?

Moving the outcomes toward making New Year’s Resolutions, I asked them to take turns describing the best teacher they had as students and what made them special. I did not realize
until listening to the recording later that I only allowed two responses before one of the participant’s had a phone ring in the background, and he answered it before muting his computer microphone. This distraction resulted in my continuing on with the agenda before providing the others with a chance to respond.

I had invited the mentor who attended the online session for EdCentral’s mentors, asking him to talk to the new teachers about his project-based learning activities and about his transition from being a first-year teacher toward the teacher he is today. He described the nine-year process of evolving from the early years of focusing primarily on how to relate to the students toward the ability to focus more on curriculum. “Now, I’m able to spend time exploring the projects that are available that are exciting for me and I think will be exciting for the students.”

I complimented the new teachers about their progress through their first semester and encouraged them to begin thinking about how they, too, will take steps to improve their instruction—assuring them that it is OK make these changes slowly.

The final portion of the agenda focused on discussions about the use of internet resources and other people for the purpose of improving classroom practices. The intention here was to have each participant share something he or she had found during a pre-session assignment of exploring the INTC resources and discussion forums. Only one of the three attendees had completed the assignment. Instead, I provided a guided tour of INTC’s website and facilitated a conversation about the potential benefits of developing a network of other teachers to discuss classroom practices and challenges with. This session provided increased opportunities for the beginning teachers to share their experiences and successes, but it was a challenge to generate discussion among the small number of participants.
**Feedback about online experiences.** All five of the beginning teachers who completed the survey had attended the October online session and three had also attended the January session. Rating their online experiences, one who attended only the October session said *beneficial* whereas another October-only participant said *not beneficial*. The three who attended both sessions said, *slightly beneficial*. Recalling that Milltown was the site where Robin was unable to unmute the audio, the one *not beneficial* and two *slightly beneficial* ratings came from this district.

Three beginning teachers who were interviewed had attended online sessions. Two reported that the online sessions were like attending a college course, listening to the professor lecture along with the accompanying PowerPoint® presentation. One of these perceptions came from a beginning teacher who was describing his experiences during the previous pilot year. The other evidence of this perception was relayed second-hand. The interview participant described how another teacher in the district had expressed this to him while they car-pooled to the November face-to-face session. All three beginning teachers expressed a preference for face-to-face sessions over participation online, though they appreciated the occasional opportunity for online sessions. Mike said, “I like face-to-face, personally. When you can’t see anyone, it’s like talking on the phone. I hate talking on the phone. I think they’re a good idea every once in a while, but I prefer face-to-face.”

For the teachers from Milltown and Countryside, they had participated in the online session as a group. The Countryside teacher said during an interview that it was hard to focus on the content of the webinar session because the group of seven teachers were also interacting about other topics besides what Robin was sharing online. He also said that this was still a
positive experience for him because he rarely saw the other new teachers, even though they were in a small, single-building district.

Just to have that excuse to come together, I miss that stuff. I don’t get to see anyone when I’m in here [classroom] all day. Of course there’s passing time, bathroom breaks, and lunch. But other than that, I feel like I hardly talk to anyone—especially the younger teachers.

One of the beginning teachers I interviewed had been unable to attend due to a school-related conflict. She wished that she had had the chance to experience it though.

I think it would be nice. This sounds awful, but I’m a multi-tasker, and I could very easily grade a multiple-choice quiz and listen to a discussion at the same time. Plus, I think that maybe I could use that technology in my classroom and bring the technology to my students.

*Mentor participation.* During the 2009-2010 grant-funded year, Robin estimated that she had an average 80% to 90% attendance online from beginning teachers while only an average of 20% to 25% of the active mentors participated. Robin speculated that this was most likely related to the lack of incentives for the mentors. They did not receive stipends to attend the sessions, and she felt that the promise of CPDUs was not sufficiently enticing.

Eighteen mentors completed the mentor survey, and only two had ever attended an EdCentral online meeting. The remainder of survey respondents had received initial mentor training from EdCentral, but no other induction-related interactions outside of their local districts since then. Top reasons for not attending the online sessions included four participants who were unaware of the sessions and nine participants who were too busy. Two participants indicated that they did not attend because they were not mentoring at that time, even though Robin’s email
invitation to the mentors specifically read, “This meeting is for anyone who is currently mentoring or who has been a mentor in the past.” One of these inactive mentors said, “So many people in our district are trained to be mentors that we are not all needed at this time. If I were to mentor again, I would definitely want and use the support of those meetings.” Another couple of mentors who taught in the same district indicated that technology challenges prevented them from attending. One said, “I would have to travel to another building for access.” It is possible, but not known for certain, that the beginning teachers from this district did not attend the online sessions for the same reason.

Of the four mentor interviews I conducted, two of them mentioned Robin. When these mentors discussed Robin, it was in relation to the work she did with beginning teachers. Beth and Lisa were the EdCentral names associated with mentor training and supports. Robin had only provided mentor training to one small group in August 2010. Prior to that, it had been Beth and Lisa. This led me to question whether mentors would have a tendency to ignore Robin’s invitation emails if they did not view her as a source of support and mentoring leadership.

In addition, the email invitations Robin sent to the mentors were not always clear regarding purpose. The invitation for the mentor online session in November 2010 only contained the information about how to log into the session, specification that this meeting was for EdCentral mentors, CPDU information, and a request for RSVPs. It did not contain any information about the meeting’s content or purpose. Six days prior to the scheduled session, no one had registered yet. Robin said she was not surprised. “They know the grant is over, and they tend to shy away from anything very techie.”

A day after her email message about lack of session registrations, Robin sent another version of the invitation to the mentors. The new version now contained a subject line that read,
“Skype..EPals..Timsweb,” and the body of the message explained to the mentors that these are the topics to be covered during the GoToMeeting™. Robin told me that this follow-up invitation had been at Beth’s prompting, asking her to let the mentors know what the meeting would be about.

I still wondered whether the mentors would know why these topics were relevant to them, and I shared this with Robin during a co-planning conversation. Her reasoning for not sharing the agenda in the first place was based on two assumptions: (a) that the names of the different technologies would scare the mentors away and (b) that the beginning teachers would have already informed their mentors about the EdCentral activities they had experienced. Robin added, “You know what kind of trouble making assumptions causes.”

Three people registered within 24 hours of the revised invitation being sent. In a later interview with one of the mentors who attended, he indicated that he only signed up because of the technology content that was going to be covered. The revised subject line of the second invitation, “Skype..EPals..Timsweb,” was sufficient to change his mind about attending.

Evidence of mentors needing continued supports. This online session was the only opportunity for the mentors to come together, and the purpose was to introduce them to the same resources that Robin had shared with the beginning teachers. Evidence from interviews and the mentor survey indicated, however, a need for mentor support focused on the practice of mentoring. At the recommendation of her superintendent, Milltown’s lead mentor attended EdCentral’s mentor training for a second time as a refresher. She said,

I had mentored last year and had felt like I kind of didn’t know what I was doing since it had been so long since I had been trained. Even though I had all the materials, it’s one thing to have the information fresh in your mind and it’s another thing to try to decipher
what I had written and to just read through that binder . . . I was really excited about this chance to take a refresher. “Oh yeah! OK. Now this is making sense. Now all the puzzle pieces are falling into place.” Plus, having done it [mentored] last year and then again this year, it really made a whole lot more sense.

On the mentor survey, one respondent recommended that EdCentral offer an abbreviated refresher course for mentors. In addition, two different mentors commented on the survey that they were struggling with how to connect with their mentees. For example, a portion of one mentor’s lengthy comment said, “Some mentees are open to our opinions and with some, our words go in one ear and out the other.”

**Discussion.** Just as classroom teachers require strong content knowledge and strong pedagogical content knowledge (Shulman, 1992), this section illustrates a similar need for mentors and online facilitators to develop their own set of pedagogical skills that differ from knowing the content. In Robin’s words,

It was just so much to not only meet the learning needs of the new teachers and mentors, but to also learn the new technologies—how to use them and even more so, how to effectively provide instruction with these new tools. That’s what took the majority of my time: planning for the GoTo sessions because it’s so different than planning for face-to-face.

Robin was part-time and already donating time to the program. She felt she needed to carefully select how to best use her time. Limited finances influenced Robin’s ability to increase her own knowledge and skills.

Participants agreed that online sessions provided the benefit of not having to travel but that providing all sessions online would be a mistake. The challenge at this stage of
implementation is to avoid giving up on the online offerings because of the glitches that have occurred. A high school principal described his experience observing one of the early online sessions when the teachers in his district were unable to participate meaningfully because of problems with the sound. He said of this experience,

I’m wondering what they[EdCentral] are going to do, are they going to pull back?

They’ve probably run into problems in some other districts as well. Or are they going to move forward? Cuz if it’s a one hit wonder—you just do it once—then it isn’t really worth anything, but if you stick with it . . . This is a great start.

Robin’s attitude was similar. On more than one occasion, her response to a frustrating online event was consistently related to the new knowledge she gained from the experience. She would say, “You know how technology can be.”

**Skype Distance Mentoring**

The district challenge of finding appropriate mentor matches for the beginning teachers was a frustration expressed by the beginning teachers in the surveys, in the interviews, and even expressed on occasion during the Just-in-Time sessions. The district leaders struggled with this as well. This issue was especially salient for the small, rural schools. Countryside’s principal described this situation,

Especially for a small district where all of our teachers, for the most part, have their sleeves rolled up, are teaching multiple subjects per day with one prep period, and then possibly coaching or sponsoring something. With that, it’s not like we have a large group of people lining up to be mentors. . . . We have some teachers, say a PE teacher who is being mentored by a 3rd grade teacher. This isn’t a bad thing, but particularly in a small
district, you often don’t have that other teacher of the same content area or one who wants to be a mentor. That’s typically how it is in a small district.

Despite these challenges of finding appropriate grade level or content area matches, the beginning teachers I spoke to described a network of other teachers who were able to assist in these areas. As the Countryside beginning teacher was moving into his new classroom, he met the exiting fifth grade teacher who he was replacing as she was packing. She offered to help him with anything he needed and provided him with her contact information. He described for me occasions when he would come across something of interest in the file cabinet that she had left behind, and how he would occasionally send her an email to find out how she used a particular worksheet that he found. Still, he expressed a need to have more assistance with the curriculum.

Similarly, a high school science teacher described his challenges mentoring a driver’s education teacher, and how he helped to connect this beginning teacher with a retired driver’s education teacher who still lived in the area. The Milltown lead mentor described how the small school provided a community of support from everyone, “like a family.” She said that knowing people helped her to know that the husband of the third grade teacher could provide content area assistance to the new PE teacher in the building. Even though this new PE teacher had an informal network of supporters in addition to a formal mentor, he still expressed a strong interest in having formal guidance from someone in his content area. Distance mentoring was intended to assist with this issue.

**Pilot-semester experiences.** In Spring 2010, Eric was the novice PE teacher in Milltown who volunteered to help Robin pilot the distance mentoring process. In an interview a year after his experiences, he indicated that his biggest challenge in implementing the process was obtaining parent signatures:
It was actually my fault that it was so difficult because of the way I worded it because at first I didn’t understand how it was going to be broadcast, like I thought that it was over the internet, which is basically how I put it in the parent note and in reality it’s just a live feed where the only people who can see it are myself and the others connected to that feed. Or the only people who are invited to see the video. If I would have worded it differently, that would have been better.

Eric’s district mentor also told me about the challenge of obtaining parental permission. She expressed that her only concern about EdCentral’s technology initiatives was that it added one more thing to a new teacher’s already overflowing plate. She added, however, that the amount of stress this might cause in a teacher would likely vary depending on the teacher’s comfort level with technology. While Eric had not used Skype prior to this distance mentoring experience, he felt comfortable with technology. He had used a webcam before, and he had a brother-in-law who worked with computers. Eric enjoyed being a part of the distance mentoring pilot, and he felt that it was a positive experience and a success. He did not, however, feel that he had improved his teaching as a result. Robin was not able to provide him with the PE specific pedagogy assistance that he wanted the most. However, Eric interpreted this project to be more about piloting the technology than about receiving instructional guidance.

To have someone with a PE background would be helpful. Like how to set up an activity in a gym so that it’ll be the safest or the most productive . . . I think that would be helpful, but sometimes that’s not possible and this was just a pilot program—dealing with the actual Skype.

The intention during the 2010-2011 school year was to move beyond piloting distance mentoring, and to move toward providing beginning teachers with content area mentor support.
Identifying mentoring gaps. Robin, Beth, and I met on September 1 to discuss this study and the plans for the year. We started by reflecting on the previous evening’s face-to-face session. A few teachers caught our attention as needing some extra attention, and we thought that they might benefit from having a Skype mentor. Robin worried about the high school business teacher who described frustration with his AP class and had already complained to the principal that students were incorrectly placed in this class. This teacher also had a room full of technology without much of an idea how to use it. He expressed apprehension about seeking assistance from the colleagues in his building who were mostly younger than he was. He had shared all of this information with Robin during the ten-minute stretch break and again after the session ended. Robin felt that he would make a good candidate for distance mentoring with Skype, and her background in business education provided a good content-area match for him.

I expressed concern about the elementary PE teacher who did not have access to another PE teacher or a mentor. He had described classes where he had 40 kindergartners at a time. The PE teacher, Mike, and two of his colleagues were the only participants in the Just-in-Time session who had not yet been assigned to a mentor. However, unlike Mike, the other two described a network of teachers in the building and in the same department who were offering assistance.

During the Just-in-Time session, Robin had asked each of the new teachers to record the name, email address, and teaching assignments of their mentors, along with their own names and teaching assignments. Robin reviewed these during our planning meeting and noted pairs that appeared to be poorly matched. “This high school English teacher from Countryside has been paired with a kindergarten teacher.” Robin’s purpose for reviewing the closeness of the mentor-matches was to determine who might benefit from having a distance mentor. EdCentral owned
four Bluetooth headsets, so this determined the maximum number of pairs that could be established for the year. Robin selected four new teachers who she felt most needed a content-match, including the PE teacher from Milltown and the business teacher.

**Recruiting distance mentors.** The next step was to obtain mentors. Initially, Robin indicated that she would be willing to do all of the Skype mentoring, but she admitted that this would not provide them all with the content matches that they needed. I voiced my concern about her overextending herself; and even more importantly, if the intention was to scale-up this initiative and to increase the likelihood of this becoming a sustainable form of professional development across the region, then building a pool of willing mentors or experts made more sense. Robin was concerned about recruiting mentors because of the lack of funding to compensate them for their participation. In response to this concern, Beth indicated that she could probably allocate some of EdCentral’s teacher leadership funds for this purpose.

With that issue resolved, Robin expressed her next concern, “I would not have the slightest idea where to start looking for mentor matches.” Having just started in this position last year, she had only had contact with the beginning teachers from that year and a handful of the mentors who attended training with her. She had met some of the district administrators when she delivered webcams to each district the previous year, but she did not feel like she had established a relationship with them.

Beth suggested perhaps a mini-grant application process allowing mentors to apply for these positions, offering $500 to conduct two observation cycles with a new teacher and to allow the new teacher to observe the mentor’s classroom at least once. Beth and Robin determined it best to seek a broad pool of mentors as opposed to seeking out individual matches for the selected new teachers in need of a mentor match. We left this meeting with Robin planning to
initiate working with the business teacher, and Beth and Robin would communicate through email to establish an application process since Robin was going to be out-of-state for the next month.

When we met again a month later, no progress had been made and our conversation focused again on the recruitment process. Our planning session began with a debate about whether it made more sense to seek volunteers from the beginning teachers first and then hand-select matches or to put out a call for mentor volunteers to establish a pool of willing candidates. Robin initially argued for working through the beginning teachers first since “you’re doing this to them,” meaning that the distance mentoring is one more thing the beginning teachers have to do. She suggested seeking beginning teacher volunteers first and then finding appropriate matches for the volunteers. She decided that the November Just-in-Time session would provide the best venue for recruiting these volunteers. Following this timeline, however, meant that mentors would not be trained until January or February.

I suggested that mentors could be recruited simultaneously through email rather than waiting for the beginning teachers to volunteer, and hopefully useful matches for the beginning teachers would come forward, preventing the need to hunt for a good match. Robin agreed that this could work. We left the October meeting with a similar plan to the one made in August. Robin would send a recruitment email to the mentors, Beth would let the administrators know about the initiative, and beginning teacher volunteers would be sought during the November Just-in-Time session.

Only one of these action steps was completed—the November opportunity for beginning teachers to volunteer for distance mentoring. Robin decided independently that it made more
sense to seek only the mentors necessary for matching to the beginning teachers, so recruiting the beginning teachers came first.

**Introduction to beginning teachers.** Robin and Eric told me about the previous years’ introduction to distance mentoring. The novice teachers read the article *See Me, Hear Me, Coach Me* (Rock, Gregg, Howard, et al., 2009) about a teacher receiving virtual coaching from a college professor. Robin said that using the article had been a mistake because it frightened the novice teachers away from volunteering. They were apprehensive about the idea of someone whispering in their ears while they were trying to teach. Independently, Eric also described his peers’ fears that resulted from reading this article as an introduction to distance mentoring.

I was, therefore, taken by surprise during the November Just-in-Time session when Robin assigned this article as a jigsaw activity for small group discussion. After reading the article, each group compiled a list of the pros and cons of Skype and Bluetooth observations. The positives included access to instant feedback and less disruption to the classroom than having a mentor physically present. The negatives included concerns about disruption to the flow of the lesson, either by whispering into the ear of the teacher at an inopportune moment or technology problems arising during implementation. Robin responded to their concerns based on the previous year’s experiences, “We discovered that it was best to use the text-chat for feedback. I did not speak to Eric while he was in the middle of teaching. Distance mentors will be trained to do the same.” She reassured them that technology issues were not their concern, that this was the mentor’s responsibility. She also said that the kids would not be distracted because they get used to having the camera in the room. What I did not hear mentioned was the purpose for distance mentoring--to provide a content-area or grade-level match. This topic was only touched upon
when Mike, the PE teacher, asked if a distance mentor assigned to him would also be a PE teacher.

Later, I asked Robin why she decided to use the article again. She said that it was better to get the fears out on the table and to address them right away.

**Distance mentoring volunteer.** Despite her decision to confront the fears from the start, only one new teacher came forward to volunteer. Interestingly, it was Mike from Milltown, the PE teacher who replaced Eric, last year’s distance mentoring volunteer. At this time, Mike had been assigned a mentor who was also PE teacher. But she was on maternity leave through December and she taught at the district’s middle school across town. Mike had developed a network of other supporters, however. He stayed in contact with a college professor, he met a couple times with the second PE teacher from the district’s middle school while his mentor was on maternity leave, and the husband of a third grade teacher in his school had been the district’s elementary PE teacher in the past. Mike also coached with this former elementary PE teacher. When asked why he volunteered for Skype mentoring, Mike said, “It would be someone new watching me teach, and someone else’s feedback about my teaching helps me to learn. The more perspectives I can get, the better a teacher I can become.” Both Mike and Eric agreed that having another PE teacher to provide the distance mentoring would be the best-case scenario, but that even Robin was a benefit because she provided another perspective on what was occurring in the classroom.

**Failure to launch.** With Mike volunteering in November, the goal was to recruit a mentor match, preferably an elementary PE teacher, before winter break. Robin said that she reviewed a list of mentors, but she was unable to recall whether or not the list included all trained mentors in the region or only the most recently trained or active mentors. A PE teacher had not
been located by January, so Robin planned to begin the process with a first observation in early February. Robin and I brainstormed other possibilities, like her contacts from Kinsdale, my contacts from the school district where I taught, or maybe a college professor. However, in January we received word from Mike that his principal would not allow him to participate.

Mike had already been wearing his Bluetooth headset during class time so that the students would get used to seeing him with it. But in order to participate, Robin required that the principal and Mike sign an agreement to indicate that everyone understood what would be occurring and that the principal understood that the mentor would be keeping her interactions with the mentee confidential. Through an interview with Mike, he described taking the contract to his principal but noticing that the principal did not really know what this distance mentoring process really was. This surprised Mike since Eric had participated in this process during the previous year. After Mike explained what this would look like, the principal felt that Mike already had too many things on his plate, particularly with the upcoming responsibility of coordinating the school’s Jump Rope for Heart fundraising event.

**Administrators’ perceptions.** Robin offered to speak with the principal but Mike felt that it would be best to let it go. Robin said, “I think that with projects of this nature, there needs to be a little more personal contact.” In a May interview with Mike, he said something similar. Mike felt that someone from EdCentral should have discussed this project with his principal, rather than the principal first hearing about it when Mike brought him this contract to sign.

When I interviewed Milltown’s principal about the distance mentoring initiative, he said, With regard to this year’s request to use Skype, I felt that PE is not the best place for this. Having someone talking in your ear during an active, PE class can cause a distraction that presents safety issues for the students. There is just too much going on in a PE class to
have those added distractions. Plus, a new teacher already has a lot going on, and adding this additional task is just too much to ask of a beginning teacher. Maybe a more experienced teacher could handle something like this, but I felt that it’s too much for a new teacher.

When I shared with him that the mentor would not be speaking in the ear of the new teacher during instruction, the principal said,

I guess I misunderstood. I could definitely see benefit in something like that. There is great benefit in videotaping and discussing the lesson. Like with Reading Recovery’s “Behind the Glass” process with classrooms having one-way mirrors that allowed new teachers to observe a class in action while the observers including a mentor could discuss what was occurring during that live situation. There is great benefit in opportunities like this.

Milltown’s superintendent was unaware of the distance mentoring attempts in the district, but he expressed support for the initiative and felt that improved lines of communication between EdCentral, himself, and the mentor coordinators would allow them to encourage participation from their new teachers.

**Need for networking.** Robin described her internal struggle regarding the importance of building a rapport through visits to the individual schools and the time and mileage it took to do so.

Robin: I don’t know how many miles we tallied up the year I did that.

Beth: Over a thousand.
Robin: And the time. And when you have this much [thumb and index fingers close together] you have to make some decisions about where to spend. But I think you have to do some of this to have credibility.

Robin recognized a need for stronger network connections with the districts, but she felt the pull of limited economic capital that was insufficient to fund the time and travel required.

It was not until after Milltown’s principal refused to allow Mike to participate in distance mentoring that Robin suggested calling a meeting of the mentors for the purpose of sharing what had occurred and seeking their input into how to get this initiative off the ground. This GoToMeeting™ session was scheduled to occur in early February, but a snowstorm caused the session to be cancelled. It was never rescheduled. Sadly, it was through this study’s mentor survey in April that we learned of an elementary PE teacher who was currently mentoring in another district. This PE teacher indicated on the survey that she was not aware of the distance mentoring initiative and indicated interest in learning more about conducting Skype observations.

**Survey and interview feedback related to distance mentoring.** Four of the five beginning teachers who completed the survey indicated awareness of the distance mentoring initiative. Two of the survey participants remembered thinking that this was a good idea when they heard about it during the Just-in-Time session, and one participant felt that it was an awful idea. “I feel like it is a better observation if they are in person to see everything going on in the classroom rather than through a computer screen.” Of the five who completed the survey, this particular teacher was the only one who had a formal mentor from her building who taught at the same grade level. The other four participants either did not have a mentor or had a mentor-match from a different building, subject, or grade level.
Of the mentors surveyed, three of the twenty were unaware of this initiative. These three mentors did not provide mentoring services during the 2009-2010 school year, and two of the three had just received mentor training in August 2010. Of the 17 who were aware of the initiative, six of them felt that the distance mentoring initiative was a good or great idea. All of these mentors came from medium-sized districts. Four mentor comments described concerns about the technology, either based on experience (“We have not had great success using Skype here.”) or knowledge (“I don’t know about this type of technology and even if my district is equipped to do this.”). Another concern was that of time. “Too many other things going on: Lexia, Aims Web, RtI, etc. Just one more thing to worry about.”

Misunderstandings about the purpose and process of distance mentoring were present throughout the interviews and the surveys. Just like the Milltown principal’s concern about the distraction of having someone whispering in your ear during instruction, one beginning teacher still described this as her fear of participating despite being present during the Just-in-Time session when Robin explained that the mentor typed the feedback rather than speaking. Mentors and beginning teachers often perceived this as just another method of providing observations rather than thinking of this as a means of opening the classroom to teachers from other buildings and districts. One Countryside teacher said, “It’s easier for me, with my mentor being 20 feet away, to just go and ask her to come watch me teaching. That just seems a lot easier than Skype for me.” Comments from mentors on the survey said, “We are a small district and the idea seemed silly to pursue,” or something similar. These comments primarily came from small districts. I described to the Countryside beginning teacher that EdCentral intended to provide grade level matches from other districts, like for the purpose of providing him with another fifth grade teacher to talk to in addition to his second grade teacher mentor located in the building. He
said, “The idea of using this to hear from someone else in another district didn’t even occur to me. Using Skype for this purpose could be really convenient for the district, even.” He went on to describe how he was going with a team of teachers to a local school district to observe how they do RtI, “so that’s like a cool thing that I wish I could do more of.”

The only principal that I interviewed who knew anything about the use of Skype for distance mentoring was Milltown’s principal and none of the superintendents were aware of this initiative. Beth said,

Early in the fall, I did talk briefly at an administrator meeting about the distance mentoring, but this was primarily as a quick announcement, that more info would be coming. I really didn’t follow through on this. I provided an overview and then told them to let me know if they were interested or if they had any questions.

When I informed the administrators about this initiative during one-on-one interviews, all of them expressed interest in pursuing this. The induction coordinator from the large district that did not depend heavily on EdCentral’s services said, “I see it [Skype mentoring] as a high need. As I said earlier, we are sometimes looking for, we are reaching out to teachers to be mentors who really don’t have the wealth of experience or knowledge that we think a mentor should.”

She went on to describe the occasional challenge of finding an appropriate mentor match, such as a recent situation with a new band teacher. The issue of content area expertise was the benefit most often cited by the administrators from the smaller schools.

**Discussion.** Those who understood the purpose and process of using Skype and Bluetooth headsets for conducting classroom observations were supportive and excited about the potential of connecting teachers with similar content area or grade-level assignments. However, communication breakdowns prevented key participants, like administrators and mentors, from
understanding and even knowing about EdCentral’s efforts. Robin depended on the beginning teachers to get this project started rather than obtaining buy-in and support from the district leaders. This lack of connection with district leaders and mentors also contributed to Robin’s difficulties in locating a mentor match for Mike. The district administrators and mentors were the ones holding the knowledge of where the mentors for PE were employed.

**Technology Experience**

As a part of this study, I wanted to explore the relationship between prior experiences with technology and experiences with EdCentral’s technology integration initiatives. Would those with more knowledge or experience with technology show greater interest or satisfaction with EdCentral’s internet-based strategies? While the response rate on the surveys was too low to conduct any significance tests, the patterns of technology use are worthy of further exploration.

The mentor and beginning teacher surveys included an item that asked respondents to indicate how often they used particular technology tools within the past two months for professional purposes and a similar question regarding tools used for personal purposes. The tools included items such as blogging, discussion forums, and social networking. Out of the five new teachers who completed the survey, the only two respondents who were over the age of 30 used a wider variety of technology tools for professional purposes than their younger peers. Survey respondents rated each technology tool on a scale from 0 to 5 to indicate the frequency of use over the past two months. Zero meant *not used*, and five meant *used daily*. For the new teachers, resource websites (*M* = 4.2), teaching strategy websites (*M* = 3.2), and district or school websites (*M* = 3.0) were most often used for professional purposes; and social networking (*M* = 2.8) and informational websites (*M* = 2.6) were most popular for personal use. The teachers reported the benefits of technology for professional purposes being access to other teachers’
advice and to lesson or activity ideas. The challenges included loss of personal, eye-to-eye contact; technology’s instability in terms of whether it will be working when it is needed; and the challenges associated with determining the reliability of the resources found on the internet. Most interesting, however, was that Mike used technology the least of any of the five survey participants, yet he was the only volunteer for the distance mentoring initiative.

Twenty mentors completed these survey items as well. Similar to the beginning teachers, they exhibited a preference for website usage for professional purposes and social networking for personal purposes. For each respondent, I generated a personal technology score \((\text{Min} = 0, \text{Max} = 41, M = 16.8)\) and a professional technology score \((\text{Min} = 1, \text{Max} = 56, M =19.2)\) by totaling the frequency of use ratings for each tool. The mentors with higher professional technology scores also tended to have higher personal technology scores. There were three anomalies where a high usage score in one area had a low score in the other. A high scoring professional technology user (32, ranked third) had a much lower personal technology score (9, ranked thirteenth). This mentor complained of district filters that made technology use at school a challenge. Contrarily, the mentor ranked third for personal technology use with a score of 30, ranked seventeenth for professional use with a score of 3. This individual cited time as being the primary issue preventing her use of technology for professional purposes.

Interview participants also spoke to the challenges and benefits of technology usage. A beginning teacher from Countryside indicated on the survey and during an interview that he participated regularly in sports-related discussion forums but he did not seek out or participate in educator discussion forums. When asked about why this was, he responded,

I would say, and I shouldn’t say it, but the topics that I want to write in on, they seem more interesting to me than the topics that I see in the teacher discussions. Also, I don’t
care if the people on the sporting ones get upset, I mean I don’t sit there and cuss them out or anything, but if I wrote in on a teacher one, I don’t want to hurt any teachers. I don’t want to step on their toes and say, “Well I would have done it this way, or why didn’t you do it this way?” I think of those people as more real than those on the sport groups. I mean, this is their profession. I don’t want to hurt their feelings about their profession.

During the interviews, there were beginning teachers as well as mentors who described lack of experience with technology or apprehension. For example, the Milltown mentor said, “You know, I’m an older teacher, and these technology things kind of scare me. I’m afraid I’m going to push a button and something’s going to blow up.” But then she went on to describe interest in the GoToMeetings™ for mentors, “I would have liked to have participated because it would have been a unique and different experience for me to be a part of that, but just because of the date and time that was chosen, it didn’t work out.”

Three of the four beginning teachers that I spoke to also commented on their own lack of technology experiences, but an interest in trying new things. The Countryside teacher said of Skype,

I thought, personally, “cool idea” but I don’t know. I felt uncomfortable. I don’t know if I can use that—it’s a little out of my—I know young people are supposed to be wizards with technology—but, I don’t know if I’d want to do it.

This teacher went on to express an interest in using Skype, although his primary purpose was for developing the skills to be able to use this with his students, like using ePals, to connect them with others outside of their small, rural town. This teacher and others saw participation in
EdCentral’s technology initiatives as potential stepping-stones toward increased technology usage in their own classrooms.

**EdCentral’s Purpose**

I also wanted to know how well EdCentral’s intended purposes aligned with the purposes that district leaders and teachers felt EdCentral should serve. Through interviews and a review of documents, I found variation in perceptions of the purpose of teacher induction in general, as well as the perceptions of the purposes EdCentral’s program should serve.

When asked to describe the ultimate goal or purpose of induction, both the beginning teachers and the mentors described induction in terms of a person, or someone to go to. The beginning teachers I interviewed wanted someone who was a safe haven for questions; to provide them with information about school policies, practices, and traditions; and to help them with curriculum and lesson planning. The three mentors focused on their roles as providing new teachers with someone who knows the ins and outs of the district and school culture, who has experienced the challenges of being new and lived to tell about it, and helping in whatever way possible to reduce the stressors experienced in that first year. Milltown’s lead mentor said, “That first year is so overwhelming in so many ways, just to have someone that’s teamed up beside you, that’s there, kind of like being your mom, to help you through.”

The mentors did not mention content area or curricular assistance, but the beginning teachers did. Perhaps this difference was because two of the three mentors interviewed did not teach the same grade level or content area as their mentee, so their mentor roles did not involve curricular assistance. Another possibility could be related to findings from other studies where mentors varied in the amount they focused on instruction as compared to school and district policies and procedures (Strong, 2009; Wechsler et al., 2010). Based on new teacher survey
responses, none of the five beginning teachers co-planned lessons with their mentors, although they did do this with other colleagues. Of the 15 mentor survey respondents who were actively mentoring during the 2010-2011 school year, only three of them reported co-planning lessons with their mentees while 13 of 15 mentors reported sharing resources or materials with their mentees.

Four of six administrators described induction’s purpose as one of providing a safe go-to person, who can provide the answers and resources that a new teacher needs without the fear of it being used against them on an evaluation. All three superintendents and two principals who were interviewed referenced induction’s purpose of reducing early career attrition from the profession and improving teachers’ instructional practices. Only two administrators described induction as a system of supports, and only one of those administrators specifically mentioned EdCentral as a part of that system. A notable difference indicated here was that the majority of administrators viewed induction and mentoring as a strategy for improving the quality of a new teacher’s instructional practices, but the mentors did not call-out instructional assistance as a purpose for mentoring. The possibility existed that a mentee could go to their mentor to ask for instructional assistance, but the interviewed mentors specifically described providing assistance with copiers, forms, and emotional support. They did not mention assistance with instruction. This hints at the possibility that administrators and beginning teachers see a mentor’s role differently than the mentor sees that role.

Only one interview participant mentioned EdCentral as being relevant to the purpose of induction and mentoring, as being part of a system of supports. However, all participants in the interviews had perceptions about the role that EdCentral should play in the induction process. Milltown’s superintendent said, “I’ve done a little bit of work through my dissertation work with
DuFours and Professional Learning Communities, and it sounds like what we’ve done is extend our layers of professional learning for our new staff with the induction program.” Two principals and a superintendent specifically mentioned the importance of their teachers being able to interact with and learn from other teachers from other districts.

In a discussion with Beth about EdCentral’s declining participation rate during the year, she expressed confusion over this phenomenon. She described how just a few years earlier, Goals 2000 money ended, but Project TNT (Teachers Networking with Teachers) continued to draw new teachers from across the region, even though there were no stipends provided for attending. Her hypothesis for this was that the principals bought into the importance of Project TNT, and therefore encouraged participation. Beth described how the principals would call EdCentral in early August to ask for the dates of Project TNT so that they could get them listed on their school calendars.

EdCentral’s initial proposal for SBE-funding described the purpose of their program as a means of sharing resources across districts to increase teacher supports. During this study, Robin focused her coordinator attentions on two primary purposes: (a) providing new teachers with instruction in general pedagogy and professional practices, such as classroom management, parent communication, and instructional strategies; and (b) coordinating distance mentoring opportunities for new teachers whose district supports appeared to be less than adequate. The focus on cross-district networking and sharing was intended with the distance mentoring initiative, but this did not get off the ground. Robin’s Just-in-Time sessions focused more on general pedagogical content than on networking and sharing.
Summarizing the Key Findings

These data, when considered together, highlight the realities of coordinating induction supports and innovative practices across multiple districts. From the analysis of multiple perspectives and data sources, I found that there was strong support for EdCentral’s work, as well as for the intended use of technology. Participants and district leaders were in general agreement that providing online Just-in-Time sessions where the participants do not have to leave their own schools was a worthwhile endeavor, particularly for economic reasons and for gaining experience with using technology. However, there was also general agreement that face-to-face opportunities were still necessary. No one recommended moving entirely to online sessions and multiple individuals expressed preference for face-to-face sessions with an occasional online meeting sprinkled in for change or variety. Robin was of a similar opinion. She reported that she conscientiously scheduled a concentration of face-to-face opportunities early in the school year for the purpose of establishing relationships.

The idea of interactions being important to participants surfaced in unexpected ways. For districts with multiple new teachers, the online sessions provided opportunities for interaction when the teachers gathered in a single location to join the online meeting. Past experiences with technology played less of a role in determining participation than I had expected. Mike was not a strong user of technology, yet he volunteered to participate in the Skype and Bluetooth mentoring project. In addition, new teachers who were apprehensive about using Skype for observations expressed an interest in still trying it because they felt it would be useful in the classroom with their students.

Providing for cross-district networking and sharing was perceived to be a primary purpose of EdCentral’s induction services by a majority of the administrators interviewed. For
administrators, EdCentral’s role in induction was to provide opportunities for the new teachers to build their social capital. However, EdCentral’s sessions provided a greater focus on information dissemination than on networking and sharing experiences across districts. Robin reported that this was a conscious decision on her part. She reported revising her practices from the previous year based on feedback that indicated dissatisfaction with small group activities. For new teachers, they appreciated EdCentral’s networking opportunities; and they wanted more content specific assistance, whether it was from the district or from EdCentral’s induction program. EdCentral was perceived as the source for expertise regarding the mentoring process from administrators, mentors, and EdCentral staff. However, Robin was not perceived as this source of expertise. Mentors exhibited needs for ongoing interactions and continued learning about the practice of mentoring, but the one opportunity provided by EdCentral to gather online was primarily for the purpose of disseminating information as opposed to discussing the practice of mentoring.

The school districts in this study and EdCentral struggled with financial and human resources. Occasional issues of access to appropriate technology tools or equipment prevented participation and created frustrations for some. Districts struggled to find mentors for the beginning teachers, and it was even tougher to find appropriate mentor matches. Teachers were stretched thin with multiple responsibilities, making cross-district scheduling and participation a challenge. Robin felt that without grant funding for stipends, she could not push for participation at the EdCentral sessions. Participation steadily declined for EdCentral events, beginning with twenty-one beginning teachers attending the August 31 face-to-face session to a total of three beginning teachers attending the January online workshop. However, issues of topic relevance and instructional strategies could have also contributed to participant attrition.
Despite the shortfall in resources this year, only two of the eleven districts represented across the data sources dropped their mentoring programs due to lost grant funding from the state. Even in the smallest of districts, the beginning teachers had a network of veteran colleagues, whether through formal mentoring, informal professional relationships, or both. However, those without mentors or those without formal content area or grade level mentor-matches expressed a need for formal, content-specific assistance.

Communication and lack of relationships played an important role in challenges obtaining volunteers for Skype mentoring, as well as attracting participation for the mentor online workshop. A majority of participants either did not know about the distance mentoring opportunities or misunderstood the purpose and process. In addition, Robin did not have strong connections with the district administrators and mentors, hindering her ability to locate meaningful mentor matches for the distance mentoring. The coordination of participating in EdCentral’s technology initiatives from the local districts fell to the beginning teachers since they were Robin’s connection with the districts.

Finally, Robin knew that relationships were necessary, but her time and energy was carefully allocated. Neither she nor Beth realized when they started this endeavor, the amount of time that Robin would need to devote to learning to use the new technologies. Robin took it upon herself to primarily learn these things herself. She knew that she did not know them well enough to be effective, but she felt that she gave to this project what she was able to give. The theme of interactions and their importance to learning to teach and mentor applied to Robin as well. Learning how to use the technology tools effectively required opportunities to interact with others who shared this practice of online teaching and integration. Robin and I were able to
provide this for one another to an extent; but if I had not been conducting this study, this learning partnership would not have existed.

EdCentral was not the first and will not be the last regional induction program to implement technology as a means of overcoming issues of economic, human, and social capital. The findings from this study contribute to a body of research in this area of online professional development, particularly for the purpose of supporting beginning teachers. The next chapter connects this study’s findings with this growing knowledge base and discusses the implications for future initiatives and further study.
EdCentral’s induction program served new teachers from nine different school districts during the 2010-2011 school year. The program’s leaders, Beth and Robin, saw technology as a means of overcoming barriers believed to be restricting the learning opportunities available to the region’s new teachers. Beth’s work with the area’s rural districts provided her with insight into the challenges experienced in rural and small districts when implementing teacher mentoring. For small schools with only one or two new teachers a year, providing a classroom management workshop in the district is not an efficient use of time and money. However, EdCentral host these workshops for multiple small districts in the region, increasing the cost effectiveness of providing these supports. EdCentral’s initiatives provided supplemental support while the local districts took primary responsibility for one-to-one mentoring.

Regional professional development comes with its own costs, however. Some teachers had to drive an hour or more just to get to one of these workshops. The decision to integrate online workshop opportunities into EdCentral’s induction services was intended to honor teachers’ time, knowing that rural teachers were already committed to other obligations outside of the school day such as lunchroom supervision, coaching, or club sponsorship. In addition, locating quality mentors from the same content area or grade-level as the beginning teacher was an ongoing struggle. Robin and Beth believed that distance mentoring using Skype and Bluetooth headsets would address the small districts’ concerns of limited access to quality mentor-matches. Robin and Beth were not the sole individuals responsible for new teacher induction in the region. For this reason, this study had to include the voices of EdCentral
induction leaders, new teachers, mentors, principals, and superintendents from multiple districts in the region.

As evidenced in the literature reviewed for this study, the potential of an innovative strategy is often not the reality (Bruce, 1993; Eglash, 2004). By the end of this study and the second year of piloting technology integration with EdCentral’s induction program, Just-in-Time participation had dwindled to only a few beginning teachers and no one participated in the distance mentoring opportunity. Robin and Beth set out to address the barriers of limited economic and human resources in the area’s rural schools, only to find new resource-related road-blocks along the way. Limited access to economic, human, and social capital simultaneously drove and hindered EdCentral’s adoption of innovation.

This case study provided a glimpse into the realities of providing induction services and introducing innovation within an educational service agency (ESA) type of organizational structure. The lessons learned from this study hold implications not only for EdCentral’s practices; but also for policymakers, researchers, and other induction leaders. Regarding the purpose of qualitative research, Stake (2010) said, “By understanding better the complexity of the situation, we should contribute to setting policy and professional practice” (p. 65). In this chapter, I summarize the lessons learned from EdCentral’s induction program as its leaders integrated technology for teacher learning, and I connect these lessons to relevant literature, including that of previous efforts to integrate technology into induction practices in the state. I conclude with my thoughts on the implications that these outcomes have for practice, policy, and future research. Given the nature of qualitative research and the inability to remove the researcher from the assertion, I need to first revisit my own situatedness within this study.
Participant and Researcher

In the interest of full-disclosure, the experiences described in Chapter 4 would have been different had I not been conducting this study. I am not apologizing for my role in impacting this study. My close involvement allowed for insights into the experience that would not have occurred had I decided to observe from distance. By scheduling sessions for Robin and I to reflect and share our observations after every EdCentral induction event, I was not only obtaining an important source of data, but I was also encouraging co-reflection and contributing my own reflections and suggestions for implementation. EdCentral’s integration of technology was important to me, and I wanted this effort to succeed. When I did not hear anything from Robin for an extended period, I would push for a progress update. When I noticed a lack of opportunities for networking and sharing experiences, I offered suggestions and shared some of the planning and implementation responsibilities. I viewed myself as a combination of researcher and a mentor for Robin. This mentor role was a carry-over from my job as Statewide Co-coordinator of the SBE grant-funded induction programs, which was how I met Robin. It is possible that Robin perceived me as her superior because of my coordinator role at INTC. However, in my role as coordinator, I made concerted efforts to develop collegial and collaborative relationships with the induction program leaders I served. My prior interactions with Robin, in fact, had focused primarily on our shared interests in technology integration for teacher induction as both of us experimented with GoToMeeting™ within our programs. I discussed my frustrations with her and asked her for feedback when she attended my GoToMeeting™ sessions, and she shared some of her frustrations with me. During the study, Robin’s candid discussion and reflections demonstrated that she felt comfortable enough to make mistakes and discuss her successes and challenges candidly.
I also felt it necessary to ask Robin how she thought the year would have been different if I had not been involved. She replied,

I truly don’t think much would have been different. If anything, you were a positive influence because you kept me going. We did spend a lot of time in conversation before and after sessions, but we knew this was going to be the case going in. If I didn’t think this study was important and valuable, then I wouldn’t have stuck with it.

While her first sentence indicates that she and other participants acted as they normally would, she goes on to describe how my participation impacted her experience in terms of time and positive pressure but that she felt the importance of the study outweighed any inconvenience. I would argue that the time for reflection and persistent pushes to move forward occur with any collaborative partnership, regardless of whether or not research is occurring. Without our planning and reflection sessions, I would not have been able to gain an understanding of Robin’s thought processes as she took the lead in integrating technology experiences for EdCentral’s program.

As an advocate for the potential of technology in supplementing new teacher supports, I took care to seek disconfirmation as well as confirmation from multiple data sources or events prior to forming assertions. As recommended by Rogers (2003) in his discussion of how to overcome pro-innovation bias, I paid attention to context and to rejection as much as I paid attention to adoption. “The first and most important step in shedding pro-innovation bias in diffusion research is to recognize that it [bias] exists” (Rogers, 2003, p. 117). When possible, I used member checking to confirm or disconfirm questionable interpretations. When this was not possible, I report the potential for alternative interpretations or weaknesses in the interpretations within the discussion that follows.
Illinois Induction and Technology

For more than 10 years, a subset of faculty, staff, and students from the University of Illinois at Urbana-Champaign (UIUC) have been involved in efforts to use technology for the purpose of increasing the supports and learning opportunities available for new teachers. Beginning in spring 2000, the Novice Teacher Support Project (NTSP) began using discussion forum platforms to provide electronic mentoring to beginning teachers in a three county region in east central Illinois (Klecka, 2004). During the 2003-2004 school year, the Electronic Mentoring Expansion Initiative, also known as e-Mentoring Illinois, took the lessons learned from NTSP’s ongoing internal evaluations to introduce electronic mentoring to three university-based induction programs in the Chicago area (Cheng et al., 2004; Klecka, 2004). In 2004, the INTC formed as the next step in scaling-up the work of NTSP to provide statewide support for teacher induction. INTC, as with NTSP and the expansion initiative, provided face-to-face learning opportunities, as well as web-based resources and online discussions for new teachers. INTC differed from its two forerunners in that it also aimed to serve those who worked with new teachers such as mentors and induction program coordinators. All three of these projects incorporated research components, some findings were published and others remain unpublished within dissertations and class projects.

It is within this environment of INTC’s development, steeped in the history and experiences of NTSP and E-mentoring Illinois, that I began my own doctoral studies; and it was through my work with INTC that brought me into contact with EdCentral, Robin, and Beth. Throughout the course of this dissertation study, I regularly found myself thinking of how EdCentral’s experiences compared to these other Illinois initiatives.
One key difference that I thought was present between the Illinois initiatives and EdCentral’s was that the EdCentral initiative came out of the K-12 educational system, rather than being a higher education initiative. However, in final interviews with Robin, it became clear that the EdCentral situation had not been as different from the others as I thought. Robin said, Beth and I had discussed possibly bringing someone in from higher ed because they push the envelope and move projects such as these forward. But then you came along. You served that role for us, believing in the project and continuing to push it forward, helping to push it forward. I was so thankful to you for taking on some of the planning and implementation.

I never would have considered myself to be representing higher education in this situation until Robin said this. I did come to this situation as a researcher, and this caused me to push for progress and activity. I realized that my persistence was partially motivated by an interest in supporting these new teachers, but a larger portion of this motivation came from an interest in data collection.

With certainty, EdCentral differed from the previous Illinois initiatives in the technology-based choices. All of them chose technology with the purpose of overcoming challenges of geography and limited resources, but the preceding initiatives used asynchronous tools while EdCentral chose synchronous tools. In addition, NTSP and E-mentoring Illinois focused their technology-based supports solely on mentoring, as compared to EdCentral’s primary focus of providing online workshops with a smaller, supplementary initiative of providing e-mentoring. Despite these contrasts, findings from the EdCentral study often reinforced those found in studies of the past e-mentoring initiatives in Illinois. In some cases, EdCentral’s face-to-face experiences mirrored those that had occurred within e-mentoring situations. In these cases, blame previously
placed on the technology affordances became questionable. Even though these Illinois studies have not been fully documented in peer-reviewed publications, these connections were important to my understanding of EdCentral, and are strongly present in the discussion that follows.

**Diffusion of Innovation and Educational Change**

“Diffusion is the process in which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003). What separates diffusion from other types of communication is the high level of uncertainty within the recipient of the message about the innovation. When an innovation is introduced for the first time, there are any number of possible futures that can be imagined. It is this unpredictability that presents the greatest challenge to the process of diffusion. The experiences and actions of EdCentral’s participants often reflected those uncertainties driven by imagined possibilities. Mike’s principal imagined Skype mentoring to involve regular commentary running in Mike’s ear as he simultaneously tried to teach a gymnasium full of energy-filled kindergartners. This vision of an imagined future led the principal to conclude that Mike’s participation would be too great of a risk to student safety. It was also imagined futures that led Beth and Robin to adapt Rock, Gregg, Howard, et al.’s (2009) use of bug-in-the-ear technologies for the purpose of connecting new teachers to veteran teachers in their rural districts.

Experts in the field of educational change tell us that efforts to affect change will fail without sufficient time and without collaboration and partnerships across all stakeholders (Fullan, 2007, 2009; Hargreaves, 1994). The process of change is also dependent on resource availability and choices about the deployment of these resources. EdCentral’s attempt to integrate technology into the region’s induction services was a process of change associated with diffusion of an innovation.
Alignment of purpose. Fullan (2009) argued that meaningful change occurs most effectively when all stakeholders share a common moral purpose that drives decision-making across all tiers of the organization. His model uses an approach he and his colleagues called “tri-level reform,” with the three levels of school, district, and state working in concert to bring about change in schools (Fullan, 2009, p. 4). This model, however, leaves out the ESA, the organizational tier in between the school district and the state Board of Education that often exists in states with large, rural populations. The challenges EdCentral experienced with the alignment of purpose and understanding between the ESA and the districts illustrate why quad-level reform is a better fit for this situation.”

Multi-district alignment. Stephens and Keane (2005) argued that ESA’s have historically experienced a tension between their charge to assist local districts with their individual needs while simultaneously functioning as an administrative and supervisory arm with responsibilities assigned by the state. For the past three years, surveys and interviews with leaders of the SBE grant-funded induction programs reflect this tension when trying to coordinate induction initiatives across multiple districts. INTC studies document challenges associated with accountability and implementation across districts with different schedules, leadership structures, and professional environments (Clift et al., 2008; Kolbusz-Kosan et al., 2007). Consortia programs were less likely to have strong participation from principals in an induction program, and consortia leaders expressed challenges associated with their inability to require attendance, feeling that their hands were tied when it came to the accountability of mentor and beginning teacher participation (Roegge et al., 2009). EdCentral’s experiences illustrated these challenges of multi-district coordination.
INTC’s studies found that multi-district induction programs were less likely to have strong administrator involvement than the district-coordinated programs. However, EdCentral’s case calls this finding into question. There was evidence that the principals in the EdCentral region were involved in the district-level mentoring of new teachers by coordinating the program and working with the local mentors. However, these principals were not connected directly to EdCentral’s work. In EdCentral’s situation, the perception of limited administrator involvement came more from limited communication about induction practices between district leaders and EdCentral’s induction leaders. EdCentral staff did not have a full understanding of what was occurring with induction at the local levels, and administrators did not have a sound understanding of what was occurring with the EdCentral induction program. Did other consortia programs represented in INTC research also suffer from weak lines of communication that potentially resulted in unreliable perceptions about lack of administrator involvement?

**Shared understanding of roles and responsibilities.** There was general agreement from EdCentral’s new teachers, mentors, principals, superintendents, and coordinators who participated in this study that providing induction for new teachers is important and necessary. However, the perspectives varied when discussing EdCentral’s role within the teacher induction process. Robin focused her coordinator attentions on two primary purposes: (a) providing new teachers with instruction in general pedagogy and professional practices, such as classroom management, parent communication, and instructional strategies; and (b) coordinating distance mentoring opportunities for new teachers whose district supports did not provide for content area or grade level needs. These purposes align with Smith and Ingersoll’s (2004) “basic induction + collaboration” that predicted a lower attrition rate than the “basic induction” category of services (p. 705).
The question, though, is how well EdCentral’s purposes aligned with those of the district leaders and participants. The reviews were mixed from local leaders and beginning teachers regarding the instruction in general pedagogy and professional practices. Robin focused on transmitting general pedagogical knowledge and providing relevant resources during the Just-in-Time sessions, while the district participants wanted increased opportunities for learning through interactions with others from different districts. If the networking had been incorporated into Robin’s planning and implementation, then this would have moved EdCentral’s program into the full package category of induction as defined by Smith and Ingersoll (2004), which reduced the predicted attrition rate even further.

A couple principals expressed appreciation to EdCentral for covering the just-in-time topics such as classroom management and parent engagement. In addition, two of the seven districts with SBE-approval specifically named EdCentral as the provider of this content for their beginning teachers. This was especially true of the smaller districts where it would not be cost effective to provide a workshop about classroom management when there is only one new teacher in the district who would be attending. However, while these districts documented the intention for their new teachers to attend these sessions, the districts did not enforce attendance. In addition, principals and others who were interviewed described how some of the beginning teacher participants expressed concerns about the lack of challenge or method of presentation. This reflects a glimmer of alignment between some administrators and Robin, but a lack of alignment with the beginning teachers’ needs.

New teachers expressed a strong need for content area support, and some administrators saw EdCentral’s Just-in-Time sessions as a potential place for new teachers to connect with others who teach the same content. Robin attempted to meet individuals’ content area needs by
introducing the distance mentoring. All of the administrators except for one were unaware of EdCentral’s attempts to meet these needs. In addition, Robin conscientiously chose to reduce the amount of interaction during the Just-in-Time sessions based on feedback from the previous year’s participants. However, this year’s new teachers and the district administrators expressed a need for peer interaction to be provided by EdCentral. These needs for content-area matches and for interaction were evident across the interviews and roles; but the purpose for implementing distance mentoring was not a shared purpose, since so many did not know about it. Miller (2009) described how organizational change agents have a tendency to communicate with those closest to the project, but neglect those with indirect connections to the change. She argued that this can get in the way of successful implementation.

EdCentral and the districts were in alignment regarding the need to provide content-area assistance for the beginning teachers. Empirical studies also indicated that induction programs are more likely to impact teacher change or retention when program leaders use rigorous mentor selection criteria, including the selection of mentors with similar content area experience as the beginning teacher (Ingersoll & Strong, 2011). In addition, studies pointed toward induction having the greatest impact when there is a focus on improving instruction (Strong, 2009), though this becomes difficult to achieve without having content-specific discussions or mentor matches. In this respect, EdCentral did not work in concert with the districts, and these quality induction components never moved beyond the good intentions.

Similar lack of alignment between participant needs and leaders’ actions existed in the Illinois e-mentoring initiatives as well. Both Klecka (2004) and Cheng (2008) documented tensions between the new teachers’ and e-mentors’ perceptions of how to participate online. E-mentors wanted more context in order to provide solutions to issues presented by the new
teachers, where new teachers felt a loss of safety when posting too much contextual information. E-mentors wanted to solve the problems experienced by the new teachers rather than engaging in joint dialogue to assist the new teacher with solving his or her own problem. Where e-mentors felt that new teachers were not participating sufficiently because they were not posting, the new teachers argued that they were participating as they read the postings of others and reflected on how the postings pertained to their own teaching situations. Robin exhibited some of the same behaviors as e-mentors did with NTSP (Klecka, 2004) and as Cheng (2008) documented from observations of face-to-face mentoring cases. These mentors, including Robin as the leader of EdCentral’s Just-in-Time sessions, felt compelled to solve new teacher issues and did little to facilitate joint dialogue or group discussions focused on guiding new teachers toward jointly developed solutions.

Covin and Kilmann, as referenced in Miller’s (2009) text, *Organizational Communication*, listed eight problems that typically hinder an organizational change process (p. 183). Communication break-downs and unclear roles and responsibilities were two items from this list that were particularly relevant to EdCentral’s challenges with alignment of purpose.

**Resources.** The allocation of resources also plays an important role in the change process and was evident as an influential factor in the experiences of EdCentral’s participants. An alignment of purpose has little impact on change if decision-making about resource allocation does not reflect a commitment to these shared purposes. Despite the low level of alignment present in EdCentral’s situation, we are still able to see how resource allocation did not always align with the needs of the program or the program’s participants. I began this study questioning the role played by resource accessibility in the experiences of participants in EdCentral’s work with new teachers.
Studies of e-mentoring in Illinois found that incentives and clearly defined purposes increased the likelihood of teacher participation (Cheng, 2008; Klecka, Cheng, et al., 2004). When value and the need are present, then the intrinsic rewards for participation may be sufficient. Based on the finding in her study of one of the three programs involved in the E-Mentoring Illinois expansion initiative, Cheng (2008) argued that lack of participation was not a matter of not having enough time, but a matter of weighing the value of how time is spent. However, the economic and human resources on hand, as well as anticipated in the future, influence the measure of value one finds in participation. This in turn influences how an educator allocates his or her time. These two types of resources played key roles in how EdCentral’s participants experienced induction activities.

The integration of technology into EdCentral’s induction program occurred because Beth and Robin wanted to reduce the amount of time and money necessary to attend the region’s induction activities. They wanted to address the issue they knew their smaller districts experienced—the inability to provide all new teachers with trained mentors from the same field of expertise as the beginning teacher. These economic and human capital needs provided the catalyst for EdCentral’s innovation but also presented barriers to successful implementation. I discuss the resource categories separately here for the purposes of organization; but in reality, they are too tightly intertwined to completely separate one from another.

**Economic capital.** EdCentral’s teacher induction program, at least the version that was under study, began as a result of grant funding from the State Board of Education in 2009. As a result of grant participation, two small, rural EdCentral districts acquired state approval for their mentoring program. Of the nine programs participating in this study, a total of seven district programs were certified by the state as providing adequate support to new teacher participants.
Six of the seven districts designated EdCentral as the provider of mentor training or of just-in-time workshops for their new teachers.

During the year of this study, EdCentral relinquished its grant but continued to provide services, as did the participating districts. Stipend funds were no longer available for beginning teachers who attended the Just-in-Time sessions and assistance to the districts for mentor stipends also disappeared. EdCentral staff felt that without the money, they had no means to hold new teachers, mentors, or administrators accountable for participation. In addition, Robin’s salary for the 2010-2011 school year was smaller than in the previous year, so some of her time was donated to EdCentral and the beginning teachers.

Incentives. Economic capital impacts decisions about time allocation. The value placed on participation had to come from a different source than from financial incentives. All but one district continued providing their beginning teachers with mentor support. However, on the mentor survey, only four of the 15 active mentors completing the survey were provided with release time to meet with their beginning teachers. Instead, their interactions occurred before or after school, during lunch, or during planning time. In order for induction to make a difference in teacher effectiveness, retention, or student achievement, mentors and new teachers need dedicated time allocated for discussions about instructional practice (Ingersoll & Strong, 2011; Strong, 2009). While district leaders described their belief that providing induction was important, economic resources were not allocated to support effective implementation.

Robin hypothesized that declining participation was due to the lack of compensation. However, Beth’s experiences with high participation rates for the unfunded Project TNT sessions called Robin’s hypothesis into question. The Project TNT sessions began when there were funds from Goals 2000, but when the funds ran out, the sessions continued to be well attended because,
Beth said, “People got used to . . . I guess it was demanded. Superintendents and principals, they bought into it and they sent all their new people . . . It became a part of the culture.” Money was not necessary when the administrators bought into it. Brown and Wynn (2007) described the role of the principal in creating a local culture for induction, pointing toward the important role principals play in encouraging (or even allowing) participation beyond the walls of their school buildings. While administrators expressed support for EdCentral’s initiatives, the majority of those interviewed indicated that they were unaware of the specifics of EdCentral’s activities. As a result, they were unable to encourage participation. This does not assume that the principals would have encouraged participation had they been aware nor does this imply that Robin was at fault. Nothing prevented the district leaders from requesting scheduling information if they wanted to provide this encouragement to participate. Without principal reinforcement and without financial assistance, the decision to spend time participating in EdCentral activities came down to the value found in the session’s content and format.

Technology access. Also related to economic capital were the experiences associated with accessibility to appropriate technology. Districts varied in their access to broadband internet connections and the availability of computers with sufficient processing power for online sessions. Robin experienced issues with the compatibility of her hardware to the activities she wanted to implement. Grant funds were used to purchase a notebook computer for Robin to use while traveling so that she would not have to continue using her personal computer. Sadly, the purchased computer contained a built-in wireless card that did not meet the broadband requirements for hosting a successful online meeting. In addition, mentor survey responses from one district described challenges participating in online meetings because it required going to a different building for access.
Robin and Beth intended to use the online meetings as a cost-effective means of offering more Just-in-Time sessions than what could be afforded with only face-to-face sessions. Participants across the interviews and roles agreed that these sessions were a good idea occasionally but that they should not replace the face-to-face sessions. Respondents liked how these sessions saved time and money by removing the need to travel.

Two administrators expressed the need for future expansion of technology-based opportunities due to the continuing decline in SBE-funding. Two other administrators expressed concerns that EdCentral’s program would have to go away due to lost funding. The principal commented about how it seemed that EdCentral was unable to plan ahead due to funding uncertainties. This was not surprising. When my INTC colleagues and I looked across multiple years of SBE-funded induction program data and experiences, we were driven to make the following claim:

The absence of timely or guaranteed continued funding was an issue beginning with the 10 original programs and continues even more so today. Programs reported that this uncertainty directly impacted program improvement. For example, grant funding supported mentor selection, training, and related activities. However, while program leaders plan for improvements in these areas, they are simultaneously planning for the possibility of these activities not being able to continue [due to funding uncertainty]. (Clift, Hebert, Brady, et al., 2010, p. 5)

Interestingly, I found evidence that technology glitches did not always result in a decrease of intrinsic value. There were repeated examples of apparent expectations that technology use would inevitably come with glitches or problems. For a few, this perceived unreliability made them apprehensive to use the technology. For example, a concern expressed
about participation in distance mentoring was the worry of the technology breaking down and causing an interruption to the flow in the classroom in order to fix it. However, others seemed to accept this unreliability of technology as an expected nuisance that causes a temporary setback, but one that would not prevent future decisions to participate. Robin was a strong example of this. She was not surprised when the technology did not function as she wanted it to and would say, “You know how technology can be.” She would also describe how lessons were learned from each technology glitch. Participants who experienced serious technology glitches during Robin’s sessions, such as the audio feedback loops expressed frustration with the situation, but with a tone of understanding as well. One building principal who sat in on one of Robin’s earliest online meetings expressed worry that EdCentral would give up after having technological issues rather than continuing to try and improve the process.

*Human capital.* Participants in this study confirmed the literature’s claims that rural and small schools are challenged by a lack of human capital, or lack of experts, in a particular grade or field (Hare, 1991; National Comprehensive Center for Teacher Quality, 2007; Fulton et al., 2005). While they did not specifically say lacking in human capital, administrators, mentors, and beginning teachers all commented on the challenge of providing beginning teachers with a mentor-match from the same or even similar content areas or grade levels. Likewise, they commented on the need in rural schools for all teachers to carry more responsibilities than their peers in larger schools.

Having a mentor with the same content area or grade level expertise was one component that increased the impact of mentoring (Ingersoll & Strong, 2011). Even the induction coordinator from the large unit district described occasional challenges finding appropriate mentor matches, as with the recent hiring of a new band director. Human capital, or the amount
of knowledge and expertise encompassed within individuals in the districts, was the primary reason for EdCentral to initiate the distance mentoring initiative. It was predicted to be a means of providing new teachers with access to a knowledgeable colleague in his or her field to observe and participate in dialogue about the nuances of teaching that subject area or grade level. To better understand the varied ways that human capital came into play with this case, I organized this discussion around the different roles involved in the induction activities in the EdCentral region.

*EdCentral’s coordinator.* Robin’s knowledge and experience provided the backbone of EdCentral’s induction work. This study was somewhat unique in its focus on the provider’s point of view as well as the point of view of the participants in the initiative. Falk and Drayton (2009) pulled together a collection of writings about the iterative processes that occur behind the scenes in order to provide online environments for online learning communities—a process of trying to understand professional learning and to then apply this understanding to design, only to learn more about the learning process that further impacts decisions of design and implementation. “We have come to think of this behind-the-scenes influence as leaving an ‘invisible imprint,’ which is often surprisingly easy to overlook” (Falk & Drayton, 2009, p. 204). Renninger and Shumar’s (2002) compilation of theories, experiences, and research associated with *Building Virtual Communities* also occasionally considered the process of design and redesign based on lessons learned from the experience. This study of EdCentral’s induction made Robin’s behind-the-scenes work more visible. Contrary to these works that came before, Robin’s backstage work was not that of the technology’s designers, but of the intermediary who took the responsibility for using the technology in such a way as to influence the learning and skills of the new teachers.
In many ways, Robin was similar to the new teachers that she served. She took this part-time position as coordinator of EdCentral’s induction program after five years of being fully retired. While she had experience with new teacher support while working with Kinsdale’s Professional Development School (PDS), EdCentral’s context was new. She was now working with teachers from multiple school districts, and she had no knowledge of their contexts other than what the beginning teachers shared during the Just-in-Time workshops. While simultaneously trying to meet the learning needs of the beginning teachers, she was also teaching herself how to use new technologies that she believed would improve the supports available for the new teachers in the region.

Robin was only in her second year as EdCentral’s part-time coordinator. Developmental theorists describe expected differences between experts and novices with regard to the number of skills that become automated over time and with practice (Berliner, 1986; Livingston & Borko, 1989; Spinthall & Thies-Spinthall, 1983; Sternberg & Horvath, 1995). It takes time and experience before a novice teacher begins to easily supplement, augment, or rewrite lessons to fit the needs of individual students. Robin was not a novice teacher, but she was new to induction leadership across multiple districts and to the current induction and professional development practices. There was a learning curve associated with leading induction and with using new technologies.

Being a developmental process, it takes time to reach effective implementation (Fullan, 2007). In early November, Robin’s expressed concerns about managing her time,

I know I’m probably not using these opportunities as best as I can, but I’m also very cognizant of time. [This is] not a full-time job, so I know I haven’t done my best job, but I’m not able to do but so much.
Fullan (2009) called this the “implementation dip” that should be expected early-on while wrestling with new skills or beliefs (p. 18). Robin continued to look at the positives despite times of frustration when the technology did not work as expected or when participation levels dipped. Following her first GoToWebinar™ with the beginning teachers, she said, “[It] feels like this is slowly moving forward, barely, but it’s forward, and that’s good.”

Robin, when considered as human capital, embodied a quantifiable amount of knowledge and experience that came from her work as a district’s technology integrationist nearly a decade ago and as a professional development school coordinator. Beth recruited Robin for this position of induction coordinator because of the value attributed to this work history. However, Robin did not yet hold the knowledge and skills necessary to effectively facilitate a GoToWebinar™ session. These skills were developing, but she was still a novice. The lack of expertise in implementing online workshops is an example of how lacking economic capital restricted the amount of time and training available for nurturing Robin’s learning process. This, in turn, restricted the amount of human capital available in Robin, which then got in the way of EdCentral’s efforts to confront issues of limited economic and human capital at the district level.

EdCentral teachers. A lack of human capital in the schools also impacted the experiences of the teacher participants. Published in 1991, Hare pointed out that teachers in rural schools were expected to take on more responsibilities than their peers in larger, more metropolitan districts. A small staff meant fewer to share the extra responsibilities such as coaching, class sponsorship, or monitoring the lunchroom or after school detentions. Sometimes, lacking human capital is not only about the knowledge and skills available, but also about sheer numbers. Of the mentors who completed the survey, 100% of them participated on district committees in addition to mentoring, and more than half also had extracurricular responsibilities such as coaching or
club sponsorship. When asked for reasons why they did not attend one or more EdCentral activities for mentors, just over 60% reported having a schedule conflict or being too busy.

However, a lack of human capital that results in busy schedules does not fully account for the lack of participation amongst EdCentral’s mentors and new teachers. Just over a third of the mentors attended all of EdCentral’s training sessions despite many having additional obligations. Mike, who also coached throughout the year attended all of the beginning teacher sessions, so additional factors were relevant here. We have already discussed the relevance of perceived value to participation, but there were other issues as well.

Technology know-how. Knowledge and experiences with technology were also measures of the human capital amongst the EdCentral participants. Interestingly, generalizations about age and technology usage surfaced during interviews on multiple occasions. For example, multiple veteran educators mentioned how their own apprehension or lack of knowledge about technology most likely differed from the younger, new teachers. In addition, some younger teachers described their limited interest in online usage, and usually did so with an apologetic tone. However, interview and survey responses did not reveal any definite patterns in technology usage related to age.

The 2010 Pew Internet Research Survey compared online activities of the different adult generations from age 18 to over 74 years (Zickuhr, 2010). The percentage of each generation’s presence in the online population was similar in proportion to that generation’s presence the true population with slightly larger online proportion for younger generations (18-33 years old represent 30% of the overall population and 35% of online population) and a slightly smaller proportion for the older generations (74 years or older represent 9% of the population and 3% of the online population). All generations still include a percentage of individuals who do not go
online at all. Of those who did not go online, the most popular reason provided was that they were “just not interested” (Zickuhr, 2010, p. 6).

In line with the Pew Study findings, there was representation of internet users and of non-users across the generations who participated in this study of EdCentral’s induction program. Some new teachers expressed a distaste for computers as did older teachers and administrators. Simultaneously, a second-career new teacher (i.e. older new teacher) and one of the oldest mentors fell into the pool of top five users of technology among those who completed the surveys. Examples of high levels of technology usage, as well as low levels of technology usage were present across the range of ages. However, the mentor survey results followed a pattern where respondents with high levels of personal technology use usually reported higher levels of professional technology use. This pattern did not hold true for the beginning teacher survey, and neither survey had enough respondents to allow for meaningful tests of significance. The patterns were, however, interesting given the contrasting interview comments regarding generalizations about age being associated with technology usage.

**Relationships.** Where human capital is about an individual’s collective knowledge and experiences, social capital is about the strength and frequency of sharing knowledge through interactions (Leana, 2011). In a series of empirical studies using value-added methods of measuring student achievement gains, the social capital measure was more strongly related to student achievement gains than the human capital measure (Leana & Pil, 2006). These researchers found that teachers with lower levels of experience and knowledge performed “as well as teachers of average ability if they have strong social capital” (Leana, 2011, p. 34). Interviews and surveys across district participants were in general agreement that EdCentral was positioned better than the local districts for providing new teachers with cross-district
interactions and opportunities for new teachers to network with and learn from one another. This was especially true of those new teachers and mentors who experienced poor mentor matches—where the assigned mentor was unavailable or from a different content area or grade level. EdCentral’s Just-in-Time sessions and mentor trainings had the potential of expanding the social capital of the participants beyond the boundaries of their schools and districts. Not only did these sessions hold this potential, but the districts’ administrators felt that EdCentral’s primary role in offering induction activities was to facilitate opportunities for cross-district networking amongst the new teachers. EdCentral’s Just-in-Time sessions did not reflect a shared agreement regarding this purpose.

**Rural networks.** Contrary to the reoccurring theme of new teachers needing a cross-district network, interviews with beginning teachers and mentors indicated that the new teachers in smaller districts often had a system of relevant support that compensated, somewhat, for the lack of an appropriate mentor match. As an example, Mike was connected to other PE teachers who had ties to the district and that he met through his role as a coach. A Countryside teacher described meeting and swapping contact information with the teacher he was replacing. Others described how the mentor or administrator provided introductions to retirees who provided assistance in areas where the mentor was unable to assist. The small school community provided an interconnectedness of human resources that allowed for the development of these support networks.

Harris (2001) described instances where this tight network of connectedness in small towns can also be burdensome for teachers. He said, “Interpersonal faux pas and differences can take on lives of their own in towns so small and isolated that an unfamiliar vehicle is noticed and local people talk with each other every day” (Harris, 2001, p. 23). In small communities where
everyone knows what everyone else is doing, a couple of administrators felt that EdCentral’s induction activities and staff provided a safe place for the beginning teachers to vent or share experiences without the fear of colleagues and evaluators knowing what was discussed. An example of this phenomenon occurred as new teachers shared with one another their surprise over the informal dress and behavior of some parents during the school’s open house. These new teachers would probably hesitate to share these reflections with their mentors or colleagues within the same schools. Instead, they were able to share these impressions with others outside of their own districts and to learn that others experienced the same surprise.

**Technology and relationships.** The importance of relationships, as well as perceptions about how to best build these relationships were also evident in the interviews and surveys regarding the use of technology. Based on the experiences of those interviewed, the consensus was that while EdCentral should continue to provide online sessions for beginning teachers, this method should only be used occasionally for meetings. Face-to-face opportunities were perceived to be important for relationship building and best for having conversation.

In the electronic mentoring literature, researchers found that meeting face-to-face prior to online interaction improved participation because of the ability to establish relationships (Klecka et al., 2002; Merseth, 1991; Metiri Group, 2007). However, this study of EdCentral experiences illustrated how face-to-face time was not sufficient in and of itself. The quality or format of that time matters if the purpose is to encourage future online participation. While Robin expressed her belief that the face-to-face sessions were important for building relationships prior to online activities at EdCentral, the face-to-face content and activities were not planned with relationship- or trust-building in mind.
Even though EdCentral’s online session in October did not include planned opportunities for interaction, both the Milltown and Countryside beginning teachers described how this online session resulted in face-to-face interaction amongst all of the new teachers in that district. They rarely saw one another, even though they were in the same building or district; so the online Just-in-Time session provided the excuse to be in the same room at the same time. Interview participants seemed apologetic as they admitted that one of the benefits of having meetings online was the ability to multi-task, whether it was the ability to have side conversations with the other participants who were in the room or it was the ability to grade papers while listening.

**Principal buy-in and support.** Earlier, I described how participation had been influenced in the past through principal support. Relationships also contribute to levels of confidence in and commitment to others. The building principals and superintendents of the districts served by EdCentral were, for the most part, complimentary of EdCentral’s services. Milltown’s superintendent said that when announcements of opportunities came across his email from Lisa or Beth, then he knew they would be of high quality. He did not, however, have much knowledge about Robin. Only one principal from Countryside described having direct contact with Robin’s induction work, and that was because he chose to join an online Just-in-Time session with his building’s beginning teachers the previous year. The others either claimed to not know about EdCentral’s induction initiatives (two of three superintendents) or they only knew about the online activities because of what the beginning teachers told them. Although none of superintendents were able to discuss the quality of EdCentral’s induction services, they were able to express their perspective that EdCentral was vital in the ability to provide cross-district networking and learning opportunities.
Only one principal was knowledgeable of Skype being used for distance mentoring because the PE teachers who participated or wanted to participate were in his building. All of the administrators expressed support for the Skype distance mentoring project once they were aware of its purpose and the process. Milltown’s principal was the one who knew about the distance mentoring, but my interview with him and with Mike indicated that he did not fully understand the process or the intention behind the distance mentoring initiative. Administrator support has been shown to be important to the success of induction practices (Brown & Wynn, 2007). However, to have the support of administrators, the relationships between the program coordinator and the district leaders need to be established.

Robin’s social capital. EdCentral’s distance mentoring initiative was going to help address the challenge of providing beginning teachers with content area or grade level support. However, this initiative did not make it beyond its initial pilot test during the 2009-2010 school year. Even though Mike came forward to volunteer, Robin was unable to locate another PE teacher to provide a content-area match; and Mike’s principal ended up refusing to grant permission for Mike to participate. Robin suffered from limited social capital, having no direct network connections to the leaders in the districts she served. This resulted in challenges of locating appropriate mentor-matches for the distance mentoring initiative.

Similarly, Robin struggled to recruit participation in her online sessions for district mentors. She sent email announcements to all trained mentors, but the majority of them had never met her. Survey responses as well as interviews indicated that mentors did not understand the purpose of the online sessions or that they had schedule conflicts that prevented them from attending. The data hinted that the lack of relationship with Robin and the lack of clearly defined purpose within the email invitations might have also impacted participation rates.
Robin’s primary connection to the districts was through the beginning teacher participants. She did not know where or how to find a PE mentor for Mike’s distance mentoring even though the mentor survey responses revealed that an elementary PE teacher was actively mentoring in another participating district. In addition, Robin’s lack of connection with others in the district resulted in a dependence on the beginning teachers to inform their mentors or administrators about what was occurring through EdCentral.

Milltown’s distance mentoring experiences illustrated this tension between putting too much on the beginning teacher’s plate while also depending on them to make the communication connection with district leaders. During both years, it was up to the beginning teacher to inform his building principal and obtain his permission, and it was up the beginning teacher to gather parental permission for participation. Even though Robin hand-delivered the webcams to each district and met with a district leader in each location during the pilot year, this single contact was insufficient for establishing a lasting relationship. In Eric’s case, his principal allowed the participation and Eric’s mentor assisted with obtaining the parental signatures. During an interview, this particular mentor expressed concern about the possibility of EdCentral’s technology initiatives placing too much pressure on the beginning teachers to make these initiatives work locally.

Mike’s experience added to this issue of beginning teacher responsibility. Mike felt that his principal’s denial of permission to participate might have been different if Robin had been the one to discuss this process with Milltown’s principal. The principal’s confusion about how the distance mentoring process worked reinforced Mike’s hypothesis. The interview responses of the administrators revealed a consistent lack of knowledge, in part or entirely, of EdCentral’s technology initiatives. I do not know whether the administrators would have actually encouraged
participation if they had more information. It is also unclear whether this would have impacted the outcomes of EdCentral’s efforts, but the possibility provides important considerations for future attempts.

When asked what she would have done differently, Robin said, “Well, I am torn, as I am every year, with whether or not to go out and do face-to-face visits in the schools with the new teachers and administrators. I feel that with that personal contact, you develop a rapport—a relationship is always positive.” On multiple occasions, Robin would point out how Beth had a direct connection with the districts but that she herself did not. This was also evident in the administrator and mentor interviews where the district leaders referenced only Beth or Lisa when discussing EdCentral’s work. Because Beth and Lisa were the primary providers of mentor training, Robin did not have the relationship with the mentors that might have been needed to encourage them to attend the online meetings that Robin hosted for the mentors.

During a conversation with Robin about the necessity of relationships and communication, Robin described the tension between establishing relationships by visiting the schools and resource availability. Displaying a tiny gap between the tip of her thumb and index finger, she said, “When you have this much [time and money] you have to make some decisions about where to spend it.” With the loss of the state’s grant funding in August 2010, Robin had to make choices regarding the amount of time spent preparing for the EdCentral Just-in-Time sessions, learning how to facilitate online meetings, coordinating the distance mentoring process, and communicating with district leaders. Robin commented that it would take a full-time person to do a quality job of coordinating EdCentral’s induction program. When coordinating an induction program across multiple districts, it takes time and money to effectively build the professional relationships necessary for effective communication and buy-in by district leaders.
**Professional development.** Change processes relate to an individual’s practices just as much as it relates to organizational processes. The individual process occurs through professional development, and the practices that produce results provide ongoing learning opportunities that are job-embedded and that provide meaningful opportunities for interaction with others (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Desimone, 2009). Traditional *drive-by* workshops that present training over a short period of time, expecting the workshop participants to be fully prepared to change their practices as a result of participation has been shown to be ineffective at producing sustainable change.

**Mentor development.** EdCentral’s mentor training did not fit the drive-by model in its entirety, but it came close. This was not so much a function of the curriculum for the training, but more a function of the follow-up services. The full training lasted five days, usually with three sessions scheduled before mentoring began and two occurring later in the school year. This training series was intensive and a one-time experience. Once mentors received the five days of training, they are on their own to implement what they had learned.

Beth described how participants in EdCentral’s trainings became very close during these sessions; however, once the full cycle was completed, EdCentral did not conduct follow-up sessions to maintain the learning community that was developing. In an interview with Milltown’s lead mentor, she expressed the satisfaction she experienced when she re-enrolled in EdCentral’s mentor training as a refresher course. She described not only the benefits of discussing the practice of mentoring with other mentors who were attending the training, but how much more she took away from this second time after having some mentoring experiences and challenges under her belt for comparison with what was being taught in the course. In
introducing the book *Taking Charge of Change*, Marcia Kalb Knoll, President of the Association for Supervision and Curriculum Development (ASCD), said,

One of the most common and serious mistakes made by both the administrators and leaders of a change process is to presume that once an innovation has been introduced and initial training has been completed the intended users will put the innovation into practice. A second serious mistake is to assume that all users of the implementation will react in similar ways. (Hord, et al., 1987, p. vi)

Responses on the mentor survey and mentor interviews indicated a need for ongoing opportunities to discuss the practice of mentoring—to troubleshoot the problems, share successful strategies, and to improve the skills that can guide the new teacher toward effectiveness faster. Just as Cheng (2008) and others (e.g. Moir et al., 2009) argued that learning to mentor is an ongoing process requiring a community of mentors collaboratively inquiring into how to improve their mentoring practices. This study of EdCentral’s situation reinforces this need for a mentoring community of learners. EdCentral’s only concerted effort to pull mentors back together after being initially trained occurred when Robin offered the online sessions for the purpose of sharing with mentors the same content that had been shared with the beginning teachers. These follow-up sessions were not for the purpose of discussing the practice of mentoring, and they were not well attended. It should be noted that EdCentral was not alone in these practices. Our research at INTC of the SBE-funded induction programs indicated that newly funded programs and multi-district programs were less likely to provide opportunities for ongoing mentor learning than the older grant-funded programs and the programs that were coordinated at the district level (Brady, 2010).
Coordinator development. Mentors were not the only participants who experienced ongoing needs for professional development. EdCentral’s plans for technology integration added an additional dimension to Robin’s developmental learning curve. In November, Robin said, “This project has grown into more than what was originally intended,” in reference to the unexpected time and energy necessary to learn the technology tools and to learn to use them effectively. All of the technology platforms that Robin selected for integration were new to her. She had not used GoToMeeting™, Skype, TimsWeb, Blogger, or GoToWebinar™ prior to her work beginning with EdCentral’s induction program in 2009. Robin’s work in the early 1990’s as a technology coordinator for Kinsdale school district meant that she was more comfortable with experimenting and learning new technologies than many educators would be. However, it still takes time to be able to use a new software tool seamlessly. When using a tool for personal use, learning the location of the various features and what those features accomplish occurs between the individual user and his or her computer without any external pressures regarding skills. When a person needs to demonstrate the use of a tool or use a presentation tool that includes an audience, the required level of understanding increases, along with the amount of time needed to gain that level of understanding.

When leading online Just-in-Time sessions, there was a need to not only know the tools and features available as a presenter, but to also be aware of what the participants see and the tools that are available to them. Robin described her practice session when she discovered that her laptop had insufficient broadband for online meetings: “That was so stressful! Not only were there problems with the sound, but I was also frustrated by [online meeting software]. It was so one-way, and you didn’t know what was going on out there.” Govindasamy (2002) described this need for learning new skills when transitioning to online teaching:
Implementation of e-Learning in any organization means reconstituting roles of faculty members. In most cases, faculty are expected to undergo immediate transformation and become e-Learning content developers . . . they must be amply enabled with the right knowledge and be given a reasonable amount of time to transform. (p. 292)

The author went on to describe how online learning platforms contain a toolbox full of features but without any pedagogical reasoning for inclusion of those tools. Nor was there any instruction in how to make pedagogically-sound decisions about the use these tools. Robin was excited about the webinar features like the participant poll that were unavailable in the meeting version of this same software. She included a poll in her October session to gauge who had trouble joining the online session. The learning objective for this poll was not evident and the new learning curve for this software resulted in frustrations for both Robin and the participants.

The purposes of online and offline activities require consideration during the planning stages. Based on observations with NTSP, Klecka (2004) hypothesized that synchronous tools like a chatroom might “lend themselves more to this orientation of providing support for personal problem-solving” in contrast to the direct solutions offered in the asynchronous discussion forums (p. 220). In a study of asynchronous and synchronous electronic learning methods, Hrastinski (2008) determined that e-learning was most effective when it incorporated both synchronous and asynchronous methods. Each type of method served different purposes: asynchronous methods encouraged more reflection and cognitive participation where synchronous tools best served the purpose of establishing relationships and discussing topics or issues that can be responded to quickly without the need to process or reflect for too long.

Neither Klecka’s (2004) hypothesis or Hrastinski’s (2008) findings regarding synchronous affordances were supported by EdCentral’s implementation given that the synchronous Just-in-
Time sessions that occurred online resulted primarily in dissemination of information rather than discussion. The tool, in and of itself, did not imply a particular use.

The learning curve associated with new technology is often forgotten when planning for integration, and it is necessary to plan for the time needed to ensure the effectiveness of implementation. E-mentoring and online professional development researchers find, across multiple contexts, that the presence and quality of the online moderator or mentor made a difference in participation and satisfaction (Friel, 2000; Holland et al., 2006; Klecka et al., 2002). In EdCentral’s case, this moderator was Robin for both online and offline experiences, and her moderator skills were in the early stages of development with no sign of opportunity for professional development other than the self-initiated time that she put into practice and exploration.

**Beginning teacher development.** In this study, the beginning teachers’ feedback regarding Robin’s Just-in-Time sessions varied. Just-in-time is a term rooted in Knowles (1980) adult learning theory of andragogy, the adult version of pedagogy. Knowles posited that effective learning opportunities acknowledge the adult learner’s ability to make their own decisions and that adults want to learn those things that they know they need at this particular point-in-time. Differentiating instruction to meet participant needs and interests applies at any age. However, the intention of andragogy is that the adult is more self-aware about the knowledge or skills needed at a particular point-in-time.

Robin’s Just-in-Time sessions were based on recommendations from induction literature and her mentor training. This training designated classroom management as the skill needed by beginning teachers at the beginning of the school year and parent communication as needed just before fall’s parent-teacher conferences. The pre-designation of topics, while grounded in
research regarding the needs of beginning teachers (Breaux & Wong, 2003; Veenman, 1984),
ignores the new teachers’ abilities to define for themselves their needs at a particular point-in-
time. This is not an evaluation of Robin’s practices, but of the curriculum used for Robin’s
training. In this case, the just-in-time term is applied to the list of topics recommended for
presentation at particular points in the school year, but the participants have no say in these
topics or the timing of these sessions.

During face-to-face sessions, Robin posted a piece of chart paper on the wall where the
teachers could post topic suggestions for future Just-in-Time sessions. However, Robin said to
me one night, “I don’t pay much attention to these responses anyway, since the [brand name]
curriculum knows what they need.” Feedback from the new teachers pointed toward the prospect
that they were not in need of this particular instruction. Interview participants described opinions
that other beginning teachers had shared with them. These second-hand opinions indicated
dissatisfaction with the content or the format of the Just-in-Time sessions, specifically concerns
that the topics and methods were too much like those covered in college.

Many professional development providers neglect to meet the needs of their participants.
Survey results from the nationally sampled 2003-2004 Schools and Staffing Survey Follow-up
Teacher Questionnaire indicated,

Only 59 percent found content-related learning opportunities useful or very useful, and
fewer than half found the professional development they received in other areas useful,
including areas where they would like more opportunities to learn. These ratings of
usefulness varied little across states and school contexts. (Darling-Hammond et al., 2009,
p. 21)
During EdCentral’s induction workshops, beginning teachers were most engaged during small group and paired activities, and feedback indicated a preference for interaction with the other beginning teachers. The beginning teachers needed the opportunities to hear that they were not alone in their struggles, and they appreciated these opportunities from EdCentral. Just as Klecka (2004) noted in her study of NTSP, “Even though it is well documented in the research that new teachers share similar concerns, the new teachers themselves often are not privy to this fact” (p. 215). The opportunity to share experiences decreased feelings of isolation. However, Robin’s planned times for interaction focused more on cooperative learning processes like the jigsaw method of learning content rather than sharing and discussing their own experiences and concerns.

In Lave and Wenger’s (1991) situated learning theory, the formation of an individual’s identity and cognitive development depends on that individual’s communities of practice. Some communities of practice are more conducive to learning than others. In those communities of practice where all members have a participatory role in that community’s learning, the individual’s development of identity and cognition are greatest. In the communities where a single person holds the power and information, rather than distributed expertise, the development of identity and cognition are stifled. While Robin had more years of experience than the others in the room, the new teachers also held knowledge about the practices of teaching that could have contributed to joint learning through a facilitated process of problem solving or reflective discussion.

This is not unlike findings from the studies of Illinois electronic mentoring. In Klecka’s (2004) analysis of NTSP discussions, she found that mentors tended to view themselves as the knowledge base to be passed on to the new teachers, but that the e-mentors felt they could not
respond meaningfully to new teacher concerns due to their lack of shared context. Robin expressed similar concerns regarding her qualifications to continue working with new teachers due to her lack of shared experience, having been out of the classroom for as long as she had been.

Cheng (2008) investigated new teacher and mentor interactions, and found that co-authored problem solving discussions occurred more often during face-to-face interactions than online. However, even when mentors have received training in how to use questioning and reflection to help new teachers arrive at their own solutions to current challenges, they do not always successfully practice these skills. Robin’s mentor training taught her how to use questioning and reflection in these ways, but she, too, needed the ability to practice and needed ongoing professional development. Induction program coordinators and professional development providers need their own continuous and collaborative learning opportunities in order to effectively meet the needs of those they serve.

Differentiation. Robin noted that this year’s beginning teachers were less needy than the year before; and perhaps the subject matter of her Just-in-Time sessions may have been considered too basic for some of them. Mike described his frustration over Just-in-Time content like graphic organizers and technology integration in the classroom that did not pertain to his situation as a PE teacher. Adults’ professional development needs and learning styles differ across individuals just as they differ amongst K-12 students. Vella (1994) included learner participation in determining the content as an important component of adult learning situations, and another principle of Knowles’ (1980) andragogy requires that adults have the freedom to learn in their preferred manner or learning style. EdCentral interviews and surveys indicated that
the new teachers were concerned most about instructional planning needs and their pedagogical content area needs, neither of which were covered in EdCentral’s Just-in-Time sessions.

Individuals set priorities based on the value they gain from participating. The concerns based adoption model described how decisions to participate in something new require a progression through phases of adoption that are driven by an individuals needs and concerns at that time (Hall & Loucks, 1978; Hord et al., 1987). It is not until an individual sees how an innovation is going to benefit him or her that they are able to begin attempts to implement. However, even then, concerns still need to be addressed during the implementation process as they arise for the individual.

In EdCentral’s program, both Eric and Mike felt that having an additional set of experienced eyes observing their teaching and providing feedback was valuable enough to put the time into obtaining principal and parent permission to participate in distance mentoring opportunities. None of the other beginning teachers were able to envision sufficient benefit in the distance mentoring process to outweigh their concerns about implementation. These theories would imply that if the content and methodology provided a better match to the needs of EdCentral’s new teachers at the time, then perhaps participation would improve.

**Impact of policy.** During a final interview with Beth, she described the need to promote induction based on what is important to the districts. At the time, this meant the recent reform legislation from the state that would drastically change districts’ evaluation practices and the new Common Core learning standards that would guide instruction statewide. She discussed the need to sell induction as connected to these reform initiatives that currently have district leaders’ full attention. She said, “You’re going to have to do something like this to get them to realize that there is a sense of urgency [for quality induction practices].” This, in turn, aligns with change
theorists who all speak to the need for everyone to be involved, from the state level down to the individual classroom to align their work and decision-making toward a common purpose (Fullan, 2009; Hargreaves, 1994; Hord et al., 1987).

An alignment of purpose across the levels of policymakers would mean that the state’s policies reflect an understanding that induction is particularly important during these times of SBE-mandated changes to the student learning standards and to teacher evaluation processes. However, at the time of this study, state funding for induction was rapidly declining and new regulations for the SBE grants for induction resulted in many ESA-coordinated induction programs being ineligible for the state money. EdCentral was one of these ESA-type programs that were unable to continue participating in the grant program. Not only were many ESA programs left out of state support for induction, but at the end of this study, the state’s governor removed the salaries of the state’s regional superintendents, like Beth, from the state’s budget. These decisions reflect a belief at the state level that ESA’s are expendable, even as leaders from the small, rural districts describe their dependence on the ESA for providing professional learning opportunities for their teachers.

Lack of policy alignment was also evident at the local level. Some teachers reported being unable to use Skype or GoToMeeting™ in their districts due to the restrictiveness of internet filtering. Policies such as these are not aligned with a belief in teachers’ needs to network with others outside of the building or the district. In some cases, these restrictions may be due to the broadband capabilities of the infrastructure, in which case, this lack of alignment is more about resource allocation than it is about policy. However, survey responses from a couple mentors indicated that they were unable to access professional websites and online communities from their school computers due to district filters controlled by the technology specialist. They
indicated that it was easier to do professional internet searches from home than to go through the red tape associated with requesting additional access from the district. Policies such as these add unnecessary barriers to the process of moving teachers toward 21st century teaching and learning practices.

Dede said, “The fundamental barriers to employing new technologies effectively for learning are not technical or economic, but psychological, organizational, political, and cultural” (as cited by Holland et al., 2006, p. 226). So, too, was the experience with EdCentral’s technology integration. The offline barriers were just as important for understanding EdCentral’s efforts to integrate technology, reconfirming that the process of adopting new technology occurs within systems that cannot be disregarded when investigating change (Bruce & Easley, 2000; Nardi & O’Day, 2000).

**Implications**

The lessons learned from this case contain important implications for the practice of coordinating induction and introducing innovation, for future policy decisions, and for future research. I conclude this chapter and this dissertation by providing a list of recommendations that have been informed by this case study and related literature.

**Use cross-district leadership teams.** In this study, coordinating induction from a regional perspective demonstrated unique complications related to facilitation across multiple school districts. In rural areas like EdCentral’s region, an ESA provides the most efficient means of providing certain services that cannot occur at the local level due to the school’s size and available funding (DeYoung, 1991; Stephens & Keane, 2005). Sociocultural learning theory and best practices in professional development (Desimone, 2009; Lave & Wenger, 1991) stress the importance of teachers learning through interaction, and especially in relation to content
knowledge and pedagogical content knowledge. However, a small staff means the inability to pair two or more PE teachers together to talk about their practices.

Cross-district collaboration is necessary for these collaborative learning opportunities to be available in rural areas. EdCentral’s situation, as well as findings from INTC’s study of the SBE-funded programs, demonstrated that cross-district initiatives are challenging to implement and maintain without collaboration and alignment. The developers of the Milwaukee Public Schools Professional Support Portal suffered implementation delays and challenges that required bringing the districts’ various departments together, “bridging the ‘silos,’” in order to move forward on their project (Holland et al., 2006, p. 226). The same is true for EdCentral. The independent districts and EdCentral need to plan and strategize together, in order to agree on a common purpose for EdCentral’s role in teacher induction, for the district’s role, for the integration of technology for distance mentoring or other professional development, and to determine an evaluation process that continuously assesses progress and improves services. Collaborative planning with induction leaders from across the participating districts could provide the buy-in and assistance from district leaders that Robin needed for encouraging participation.

Also related to bridging silos, I would argue that the coordinator of induction should also be immersed in the other professional development initiatives occurring at EdCentral. This would allow for induction planning to better align and support other professional learning that is already occurring rather than being its own initiative that is disconnected from the other initiatives such as technology integration, instructional coaching, differentiated instruction, and response to intervention. When I suggested this alignment of initiatives to Beth, she responded, “You really have to have visionary leadership in the districts for something like that. Someone to
really see the interconnectedness of everything.” However, I believe this interconnectedness can be promoted and facilitated as well, and the ESAs are in a good place to do so. As districts are revising their teacher evaluation systems, implementing new learning standards for student learning, and planning curriculum and assessments to align with the new standards, a regional leadership team expands the social capital available across district boundaries. It provides a space for joint planning for the reform initiatives and teacher induction’s role in the reform. A successful cross-district collaboration for the purpose of aligning induction services and clarifying roles has the potential to positively affect change from the ESA down to the individual teachers and the students in their classrooms.

**Conduct research to better understand multi-district coordination.** The majority of research about induction program effectiveness and measures of impact tend to focus primarily on initiatives in urban and suburban areas. Other than knowing that providing induction in rural areas is difficult, I was unable to find any empirical research regarding teacher induction in rural areas or teacher induction models that are coordinated across multiple districts as with an ESA. Both the work of INTC and EdCentral’s experiences illustrate how the coordination of induction activities increases in complexity and challenge when working with multiple districts. This is an area of study in need of attention. Nearly one-fifth of the nation’s public school students attended rural schools during the 2006-2007 school year (Johnson & Strange, 2009), and if we subscribe to what the research is beginning to reveal about quality induction’s impact on student achievement (Ingersoll & Strong, 2011), then we need to better understand how to support new teachers in these contexts.

**Plan for ongoing development of coordinators and mentors.** Robin was new to coordinating induction from a regional perspective, she was a new user of the technologies she
wanted to integrate into the induction program, and she was adjusting to being back in education after five years of full retirement. These adjustments require time to learn, to practice, and to reflect. Interaction with others when planning instruction and for reflecting about instructional practices facilitates learning (Desimone, 2009; Lave & Wenger, 1991; Leana, 2011; Leana & Pil, 2006). These findings are primarily used to inform professional development for teachers and learning activities for students, but what about the process of learning to lead professional development, induction, or other initiatives? Sociocultural learning theory is just as applicable to these leadership roles, but rarely do professional development providers and program coordinators have the opportunity to jointly plan, reflect, and learn from one another. In concluding their text about facilitating change, Hord and colleagues (1987) said, “Policymakers and administrators contemplating change should consider also the question of who will facilitate the facilitators” (p. 90).

Because this study was occurring, Robin and I had the opportunity to observe one another in practice, to plan together, and to co-reflect about our observations during Just-in-Time sessions with the beginning teachers. We both found this time to be beneficial; but if this study had not been occurring, Robin would be working in isolation. State level organizations need to provide opportunities for induction leaders to come together to formatively assess their programs’ impact and implementation, aiming to continuously improve the skills of leadership. The INTC provided opportunities for program leaders to come together to network and learn, but program leaders and funders need to make the time to participate in these opportunities. Professional developers train teachers and district leaders to provide time for teachers to analyze student work and other data in collaboration with peers for the purpose of improving instruction. Professional developers should practice these same skills that they are training others to
implement, except to do so for the purpose of improving their professional developer, facilitator, and coordination practices.

The same is true of the mentors. Once EdCentral’s mentors finished their training, they did not have formal opportunities to gather and discuss their practices. The concerns expressed on the mentor survey about challenges building relationships with their mentees and administrators putting them in uncomfortable positions indicate a need to troubleshoot and continue to improve their skills. The need for ongoing mentor development is not a new recommendation (Moir et al., 2009). INTC’s researchers, in studying the SBE-funded programs found that induction programs develop and improve over time (Clift et al., 2008; Kolbusz-Kosan et al., 2007). In the early stages of development, formal mentor training is beginning to occur. As the program continues to self-assess and monitor its implementation, the need for mentors to network, discuss, and continuously improve their own practices becomes evident.

**Study technology integration for teacher induction.** This dissertation is the third out of UIUC investigating internet-based technology used for the purpose of supporting new teachers in the state. Each dissertation discussed a different initiative. The first two focused on asynchronous discussion forums while this study focused on synchronous tools. The first two focused on online mentoring, and so did this one except that the distance mentoring was not the primary use of technology at EdCentral. EdCentral’s first focus was on providing just-in-time content and mentoring was a secondary purpose.

Despite these differences, all three initiatives struggled with participation and with sustainability. The outstanding question that has yet to be answered is whether or not technology tools for mentoring or other models of professional learning are capable of meeting or even supplementing the needs of beginning teachers. We know that new teachers have needs for
support and job-embedded learning, but can technology meet these needs effectively? It is possible that only face-to-face, on-site methods can provide what new teachers need for their early-career development. The study of eMSS discussion threads indicated that second-year teachers were more likely to discuss content and content-specific pedagogy than their first-year teacher peers. Robin decided that the Skype mentoring with first year teachers should not involve talking to the new teachers during their instruction, feeling that this was too distracting for the new teachers. However, Rock, Gregg, Gable, and colleagues (2009) wrote about how the faculty member speaks in the ear of the teacher to help guide the new teacher’s practices. These Project TEEACH teachers were experienced classroom teachers who are working on adding special education to their certifications. Is the bug-in-the-ear adaptation of Bluetooth headsets more aptly suited for experienced teachers than for first year teachers? The Illinois initiatives and nearly all of the internet-based initiatives described in this dissertation ended abruptly as the funding went dry or the leadership transitioned. These initiatives did not have the chance to move beyond the trial and error stage of development.

EdCentral began a process of technology integration that has not, to my knowledge, been documented in the research literature. Conducting distance observations using videoconference tools were documented by higher education faculty using these tools for teacher training observations (Rock, Gregg, Gable, et al., 2009), but the case study of EdCentral’s induction program demonstrated the importance of increasing our understanding of the realities of implementing an innovation from within the educational system. Despite general agreement across those who were interviewed that distance mentoring and online Just-in-Time sessions were good ideas, this initiative failed to be adopted. More studies of technology integration need to document the perspective of the coordinator and the offline context that affects and is affected
by the effort to innovate. How do coordinators continuously improve their own practices, and how do the outcomes of an innovation compare when led by an individual versus an initiative that is led by a collaborative leadership team?

We also need to have a better understanding of the process for learning to lead effective professional development using technology. “Time after time organizations will seek to assess the effectiveness of an innovation without ever examining how it is being used” (Hord et al., 1987, p. 54). Making pedagogical decisions about what tools to use in order to achieve the wanted outcomes differs from the wealth of literature out there that describes effective facilitation techniques. These techniques are more about knowing how to use the tools and less about knowing which tools to use to achieve particular learning outcomes. How does this learning process differ when learning alone versus learning with a cadre of other professionals in similar situations?

Three of the beginning teachers who were interviewed described an interest in participating in EdCentral’s technology-based activities because they were considering the strategies for future use with their own students. Does participation in online learning for teachers lead to increased integration of technology in their classroom; and if so, are there particular conditions that are necessary?

**Policymakers need to understand the process of change and make decisions accordingly.** The current policy context and culture of education is that of data driven decision making and measuring the impact of various strategies and components that are believed to bring about teacher change and increased student achievement. The State Board of Education wants evidence that the grant-funded programs are having just such an impact. Those providing funding want proof of impact for continued funding. However, initiatives in the early stages of
development are too unstable to provide the data that policymakers want to see. Change takes time (Fullan, 2009).

Teacher evaluation in this state is moving toward performance ratings where a percentage of a teacher’s performance must be based on a measure of his or her students’ achievement. However, learning to teach, learning to lead professional development, learning to integrate technology, and implementing induction services all take time to develop. In addition, the need to learn through interaction with peers requires financial and human resources, both of which are particularly challenging for rural districts (DeYoung, 1991; Stephens & Keane, 2005). No one automatically practices these skills effectively. There are differences between novices and experts (Berliner, 1986; Carter, Cushing, Sabers, Stein, & Berliner, 1988; Carter, Sabers, Cushing, Pinnegar, & Berliner, 1987), and we are learning to consider this with regard to teacher development.

EdCentral received a grant for induction, but the amount that the state awarded them was not even half of what they had proposed. Then the state revised the rules governing the grant, intending to increase the quality of these induction programs, but instead the rules established boundaries that resulted in EdCentral and others to refuse grant funds. These administrative rule changes along with funding reduction resulted in a disproportionate number of ESAs not applying for continuation funding (Brady, 2011). These are the situations that occur when Fullan’s (2009) tri-level reform strategy is not implemented. The state did not align induction decisions when revising the administrative rules with the needs of the local programs being funded. Evidence demonstrated that the SBE-funded induction programs were consistently providing higher quality practices than districts without the state funding. Even so, programs like EdCentral were forced to take steps backward due to lost funding from the state.
At the time of this writing, the education service agencies in the state are at risk of being eliminated. The Governor removed all salaries for the regional superintendents and their administrative staffs from the state budget. This means that Beth’s position has been eliminated and will remain this way unless the legislature overturns the Governor’s decision. With Robin resigning as EdCentral’s induction coordinator to spend more time with family and with limited funding to support a new coordinator, the future of EdCentral’s induction program is uncertain. Robin and Beth were the believers in the use of technology for conducting beginning teacher mini-workshops and for distance mentoring and observations. What does the future hold for continued efforts to integrated technology and to support new teachers that enter these small districts during a time of drastic reforms in the schools? The policy landscape requires that new teachers enter the classroom fully prepared to make an impact, and in a couple years their evaluations and their jobs will depend on it even more than it already does. Agreeing that new teachers need support to survive and thrive in the classroom is not sufficient. Actions that reflect this agreement must also occur, such as decisions to allocate economic and human capital toward this cause. And if technology is to be part of the solution, then participants need consistent access to up-to-date technology and moderators need sufficient time and resources for developing the skills of online facilitation.

In the words of Fullan, “The interface between individual and collective meaning and action in every-day situations is where change stands or falls” (2007, p. 9). Without shared commitments to initiatives like EdCentral’s, and without actions that reflect these commitments, the seeds of change have a tendency to wilt and die before they get a chance to take root. Without a healthy plant, we have no way of assessing the quality of its fruit. The same is true of initiatives like EdCentral’s use of technology to support beginning teachers. We cannot
understand the quality of support that synchronous technologies provide for new teachers until these initiatives achieve some semblance of stability. This study provided insights into the complexity of implementing change across multiple districts. Knowledge of how to nurture change increases the likelihood of future innovations developing to the level of maturity necessary to realistically assess the outcomes produced by those initial seeds of change.
References


### Data Sources that Informed the Study’s Questions

<table>
<thead>
<tr>
<th>Questions and Issues</th>
<th>Face-to-Face Workshop</th>
<th>Online Workshop</th>
<th>Secondary Data Coordinator Planning</th>
<th>Surveys</th>
<th>Participant Interviews</th>
<th>Skype Mini-case Studies</th>
<th>State and Federal Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>How are participants’ experiences within this induction program impacted by the levels of economic and human capital available in the districts and at EdCentral?</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How does prior experience with technology relate to how the program participants experience the integration of technology in the induction program?</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In what ways do participants’ perspectives of, and experiences with, EdCentral’s initiatives differ by role (coordinator, district superintendent, building principal, mentor, and beginning teacher)?</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>How does EdCentral’s regional work align with individual district, school, and teacher needs?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Discussion**

- Participants referenced impact of lost funding and access to particular people while sharing experiences during workshops, within interviews when responding to questions about challenges and the rural context, and on surveys with regard to attendance choices and as “additional comments” to questions about induction experiences.

- Conversations about technology usage occurred within workshops, were shared during one-on-one interviews, and through responses to specific questions about technology experience on the participant surveys.

- Reference to resource availability, collegial relationships, rural or small school qualities, and administrative support were shared during workshops and expressed within interviews across all stakeholder roles. Census and school report card data also contributed to an understanding of contexts.

- The failed efforts to implement distance mentoring using Skype, in combination with instances of miscommunication or misunderstandings during early observations, greatly increased the importance of this question. I expanded the interview pool to include district administrators in order to gain an increased understanding of stakeholder alignment.
Table A2

*Chronology of Key Events*

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Description</th>
<th>Data Source(s)</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/09-8/10</td>
<td>SBE Grant</td>
<td>EdCentral applies for and receives a grant from the State Board of Education for summer planning and preparation of an induction program. Continuation funding in January 2010.</td>
<td>SBE’s public records</td>
<td></td>
</tr>
<tr>
<td>Spring 2010</td>
<td>Pilot technology</td>
<td>EdCentral receives continuation grant from the state for induction. Conducts GoToMeeting sessions for beginning teachers and mentors. Experimentation with distance mentoring using Skype and Bluetooth by Robin and Eric.</td>
<td>self-report, mentor survey, blog</td>
<td></td>
</tr>
<tr>
<td>8/5/10</td>
<td>Just-in-Time Face-to-Face</td>
<td>First Just-in-Time session with beginning teachers to establish EdCentral session routines and plan for first days in the classroom.</td>
<td>Robin</td>
<td></td>
</tr>
<tr>
<td>8/31/10</td>
<td>Just-in-Time Face-to-Face</td>
<td>Just-in-Time face-to-face session for beginning teachers focused on classroom management. Relationship with Milltown new teachers begins during a small group activity.</td>
<td>Participant observation</td>
<td>19 new teachers</td>
</tr>
<tr>
<td>9/28/10</td>
<td>Just-in-Time Online (Cancelled)</td>
<td>Session cancelled due to coordinator’s challenges with wireless connect while travelling out of state and some participants unable to attend due to another workshop scheduled that day.</td>
<td>Email message and blog</td>
<td>Robin</td>
</tr>
<tr>
<td>10/5/10</td>
<td>Online practice</td>
<td>Practice session using online webinar platform with colleagues. Audio issues from Robin’s computer or connection.</td>
<td>Participant observation</td>
<td>Robin &amp; colleague</td>
</tr>
<tr>
<td>10/18/10</td>
<td>Just-in-Time Face-to-Face</td>
<td>Just-in-Time face-to-face session for beginning teachers focused on parent conferences, bullying, and professional teaching standards. Small group activities and informal discussion with Milltown teachers.</td>
<td>Participant observation</td>
<td>14 new teachers</td>
</tr>
<tr>
<td>10/28/10</td>
<td>Just-in-Time Online</td>
<td>Online webinar session with beginning teachers. Audio challenges and inability to use a text chat amongst participants.</td>
<td>Participant observation</td>
<td>10 new teachers</td>
</tr>
<tr>
<td>11/10/10</td>
<td>Mentors Online</td>
<td>Online session with mentors. Nearly identical content as previous online session with new teachers.</td>
<td>Participant observation</td>
<td>2 mentors</td>
</tr>
<tr>
<td>11/16/10</td>
<td>Just-in-Time Face-to-Face</td>
<td>Just-in-Time face-to-face session for beginning teachers focused on technology, distance mentoring with Skype, and instructional strategies. Small group activities and informal discussion with Milltown teachers. Mike volunteers for distance mentoring.</td>
<td>Participant observation</td>
<td>9 new teachers</td>
</tr>
<tr>
<td>12/7/10</td>
<td>Just-in-Time Online (cancelled)</td>
<td>Online session for beginning teachers cancelled. Only one beginning teacher RSVP’d with plans to attend</td>
<td>Email exchange and guest mentor</td>
<td>Robin</td>
</tr>
<tr>
<td>1/9/11</td>
<td>Just-in-Time Online</td>
<td>December online session rescheduled with guest mentor sharing project-based instruction practices and goal setting for 2nd semester. Mike reveals that principal will not allow him to participate in distance mentoring.</td>
<td>Participant observation</td>
<td>3 new teachers</td>
</tr>
<tr>
<td>2/1/11</td>
<td>Mentor Online (cancelled)</td>
<td>Two RSVPs but eminent snowstorm results in cancellation. Never rescheduled and no more beginning teachers sessions scheduled either.</td>
<td>Email exchange</td>
<td>Robin</td>
</tr>
<tr>
<td>3/11-5/11</td>
<td>Study Surveys and Interviews</td>
<td>No more beginning teacher or mentor meetings held. Only communications between EdCentral and participants consist of requests for survey, focus group, and interview participation.</td>
<td>Email exchanges</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B
Participant Semi-structured Interview Protocol

What is the ultimate goal or purpose of an induction/mentoring program for beginning teachers?

Describe your experiences with the EdCentral induction program. What are the strengths of the program, what are the weaknesses or areas for improvement?

How does the EdCentral program fit (or not fit) with your local district’s context, culture, and induction program?

How, to your knowledge, is the EdCentral induction program utilizing technology? What are the benefits? What are the disadvantages? What works? What doesn’t work?

Some say that providing induction supports for beginning teachers in rural or small town schools is particularly vital and others say that it’s less of a necessity in rural/small town schools. What do you think and why?

If time allows, we might discuss your reflections regarding this quote from the National Commission on Teaching and America’s Future (NCTAF)

Modern information technologies can provide distributed learning opportunities to communicate and learn in alternative ways. For example, opportunities to interact in an asynchronous fashion (e.g., threaded discussions that do not require real-time postings but can be entered at any time) enhance participation as well as opportunities for reflection; while synchronous interactions (e.g., chat rooms or live discussions that occur in real time) make it easier to work in small groups and to get to know colleagues located at a distance. These and other capabilities of online networks offer real advantages for breaking down the isolation experienced by new teachers. They make it possible to create a professional community that extends beyond the boundaries of a teacher’s school or local colleagues.

-Fulton, Yoon, and Lee (2005), *Induction into Learning Communities*, p. 21
Appendix C
Mentor Survey

### EdCentral Mentor Survey

#### Study Description and Participants' Rights
Prior to beginning the survey, please read the following description of the study and your rights as a study participant.

#### Teaching Assignment
Please select from the list below to describe your most recent teaching assignment.

**School District (select from the pull-down menu)**

- [ ] Null
- [ ] Elementary
- [ ] Junior High
- [ ] High School

**Grade level**
- [ ] Null
- [ ] Elementary
- [ ] Middle
- [ ] High School
- [ ] Post-Secondary

**Content Area(s)**
- [ ] English
- [ ] Math
- [ ] Science
- [ ] Social Studies
- [ ] Health
- [ ] Fine Arts
- [ ] Career
- [ ] Other (please specify)

Does your certification match your teaching position?
- [ ] Yes
- [ ] No

Do you serve on district or school committees?
- [ ] Yes
- [ ] No

### EdCentral Mentor Survey

#### Do you have coaching or other extracurricular responsibilities?
- [ ] Yes
- [ ] No

#### Teacher Demographics

Please indicate your gender:
- [ ] Male
- [ ] Female

Please indicate your age:
- [ ] Under 25 years old
- [ ] 25-45
- [ ] 46-65
- [ ] Over 65

Please indicate your ethnicity:
- [ ] Latino
- [ ] African American

Please indicate your race:
- [ ] White
- [ ] Black
- [ ] Asian
- [ ] Native American
- [ ] Other (please specify)

#### Mentoring
EdCentral Mentor Survey

When did you receive your initial mentor training?
- [ ] I have not received mentor training
- [ ] 2010
- [ ] 2015
- [ ] 2016
- [ ] 2017
- [ ] 2018
- [ ] 2019 or earlier

Please mark all that apply.
- [ ] I am currently in a mentoring role.
- [ ] I am a beginning teacher.
- [ ] I have not served as a mentor this year.

Mentoring and Technology

How often did interactions with your mentee occur through the use of online communications?

<table>
<thead>
<tr>
<th>Classroom</th>
<th>Once a week</th>
<th>Twice a week</th>
<th>Once a month</th>
<th>Once a semester</th>
<th>Once a year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
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<td>Facebook/MySpace, etc.</td>
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<td>Twitter</td>
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<td>Skype or other applications</td>
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<td>Instant Messenger (text only)</td>
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<tr>
<td>Discussion boards</td>
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<tr>
<td>School or district intranet</td>
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<tr>
<td>Other (please specify)</td>
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</table>

Mentoring Activities

EdCentral Mentor Survey

Which of the following activities did you participate in with your mentee(s)? (Check all that apply)
- [ ] Observed/taught lessons and provided feedback
- [ ] Shared materials or resources with mentor
- [ ] Collaborated lesson with mentor
- [ ] Analyzed sample of student work with mentor
- [ ] Prepared teacher with professional development support
- [ ] Helped mentor to observe my teaching
- [ ] Tapped into mentor about the strengths and needs of specific students
- [ ] Helped mentor identify and solve instructional issues and problems
- [ ] Discussed student assessment data to help mentor make decisions about instruction
- [ ] Collaborated with mentor on a professional growth plan

How was time for scheduled meetings between mentors and new teachers?
(Click all that apply)
- [ ] My school scheduled the school year-long period, or during school only.
- [ ] We had common planning periods to facilitate these meetings.
- [ ] The school or district provided release time for these meetings.
- [ ] The school or district had special meeting times each week (e.g., early release days) that we could use.

Other (please specify) ______________________________________________________________________

How beneficial has participation in the district’s or building’s mentoring program...

- [ ] Very beneficial
- [ ] Beneficial
- [ ] Neither beneficial nor detrimental
- [ ] Detrimental
- [ ] Not beneficial

Comments: ________________________________________________________________________________

What recommendations, if any, do you have for improving the local (district or building) mentoring program?

Comments: ________________________________________________________________________________
EdCentral Mentor Survey

EdCentral Supports
Are you aware of EdCentral's efforts to use Skype and Bluetooth headsets for distance mentoring and classroom observations?

☐ yes
☐ no

Skype Mentoring
What were your impressions when you first heard about using Skype for classroom observations?

| Using Skype and Bluetooth headsets for distance mentoring initially fine. |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Great Idea                  | Good Idea                  | Neutral                     | Bad Idea                   | Avoid          |

Please explain:

Would you consider being a distance mentor for a beginning teacher?

☐ yes
☐ no
☐ maybe

Please explain:

Mentor Training Sessions
Which EdCentral Mentor Training sessions did you attend in the past two years?

☐ August 2010/Intensive 161
☐ October 2010/Formative Assessment
☐ March 2010/Analyzing Student Work
☐ August 2010/Intensive 161
☐ September 2010/Formative Assessment
☐ None of the above

EdCentral Mentor Survey

Mentor Training Benefits
How beneficial were these mentor training sessions?

<table>
<thead>
<tr>
<th>I found the session(s) that I attended to be:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Beneficial</td>
</tr>
<tr>
<td>Mostly Beneficial</td>
</tr>
<tr>
<td>Beneficial</td>
</tr>
<tr>
<td>Very Beneficial</td>
</tr>
</tbody>
</table>

Comments:

Reasons for Absence (F2F)
Select the option(s) that best describe the reason(s) for not attending one or more of these mentor training sessions:

☐ Not Available at sessions
☐ Distance of the session
☐ School related schedule conflict
☐ Other not related to school endeavors
☐ Too busy
☐ Too far away
☐ Other:

Other (please specify):

GoToMeeting
Which EdCentral GoToMeeting sessions did you attend?

☐ January 2010/Intensive 161
☐ November 2011/Park, Turnath, Bostman
☐ None of the above

GoToMeeting Benefits

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EdCentral Mentor Survey

How beneficial were these GoToMeeting sessions?

- [ ] Not beneficial
- [ ] Slightly beneficial
- [ ] Beneficial
- [ ] Very beneficial

Comments:

Reasons for Absence (GoToMeet)

Select the option(s) that best describe the reason(s) for not attending one or more of the GoToMeeting sessions:

- [ ] Work-related activities
- [ ] Unavailability of the session
- [ ] Personal reasons
- [ ] Other

Other (please specify):

Would you consider participating in future EdCentral GoToMeeting opportunities?

- [ ] Yes
- [ ] No
- [ ] Maybe

Please specify:

EdCentral Recommendations

EdCentral Mentor Survey

When confronted with mentoring-related challenges, where do you tend to turn for assistance? (number in order of preference)

- [ ] Central mentor (training)
- [ ] Induction coordinator
- [ ] Central mentoring support
- [ ] Central mentoring administrator
- [ ] Another mentor
- [ ] A colleague who is not a mentor
- [ ] Family or friends outside of the mentoring system
- [ ] Other

Other (please specify source and place in the ranking):

Which of the following internet-based communication tools have you used when troubleshooting mentoring challenges?

- [ ] Email
- [ ] Social networking tools like Facebook or Twitter
- [ ] Instant messaging (e.g., Skype)
- [ ] Video or audio chat (e.g., Skype)
- [ ]华为的上述

Other (please specify):

What recommendations do you have for improving the EdCentral’s overall support or training provided for mentors? This includes face-to-face opportunities, online activities, etc.

Other (please specify):
EdCentral Mentor Survey

What recommendations do you have for how EdCentral can improve the services provided for beginning teachers throughout the region? This includes face-to-face opportunities, online activities, etc.

Professional Technology Usage

Considering only the LAST TWO MONTHS, rate the extent to which you used (on average) the following internet-based tools for PROFESSIONAL support, learning, and/or resources:

<table>
<thead>
<tr>
<th>General education discussion</th>
<th>Twitter</th>
<th>Courses in a webinar</th>
<th>Courses in a month</th>
<th>Once a week</th>
<th>Daily</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Monthly</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Every 6 months</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Twice a year</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Once a year</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

How have you benefited PROFESSIONALLY from internet-based tools, interactions, and resources?

EdCentral Mentor Survey

What are the challenges or weaknesses of using online interactions, tools, and resources for PROFESSIONAL purposes?

Personal Technology Usage

Considering only the LAST TWO MONTHS, rate the extent to which you used (on average) the following internet-based tools for SOCIAL or PERSONAL INTEREST purposes:

<table>
<thead>
<tr>
<th>Discussion of students</th>
<th>Daily</th>
<th>Couple times a week</th>
<th>Couple times a month</th>
<th>Once a month</th>
<th>Daily</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twitter</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Email groups</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Social networking sites</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Social networking sites</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Final Thoughts

Is there anything else you would like to share regarding your experiences with Induction/mentoring, the Mid-fill program, or the use of technology?

Would you be willing to participate in a focus group or one-to-one interview to further discuss your mentoring experiences?

Yes
No
EdCentral Mentor Survey

Thank You

Thank you very much for your participation and contribution to this study.

In appreciation of your time and contribution to this study, we would like to enter you in a drawing for a $50 Amazon gift certificate. Two gift certificates will be awarded, and your estimated chances of winning are 1 in 11. Winners will receive an email gift certificate directly from Amazon on April 29th, the date of the drawing.

In order to contact those group volunteers and to notify the winner of the Amazon gift certificate, we need to ask for your email address. This information will only be accessible to researchers and will only be used for the purpose described above. Email addresses will be removed from the survey data and destroyed immediately following the study's completion.

Email address:  


Appendix D
Beginning Teacher Survey

EdCentral Beginning Teacher Survey

Study Description and Participants’ Rights

Prior to beginning the survey, please read the following description of the study and your rights as a study participant.

[Peer counseling]

Teaching Assignment

Please select from the drop-down box to describe your current teaching assignment.

School District (select from the pull-down menu)

Grade level

- Kindergarten
- Elementary
- Middle School
- High School

Content Area(s)

- Science
- Math or science
- English
- Language arts
- Social studies
- ESL, English as a second language
- Self-defined area
- Other (please specify):

Does your certification match your teaching position?

- Yes
- No

Do you serve on district or school committees?

- Yes
- No

EdCentral Beginning Teacher Survey

Do you have coaching or other extracurricular responsibilities?

- Yes
- No

Teacher Demographics

Please indicate your gender:

- Male
- Female

Please indicate your age:

- Under 25 years old
- 26-30
- 31-40
- 41-50
- Over 50

Please indicate your ethnicity:

- Latin
- East, Latin American
- Other (please specify):

Please indicate your race:

- White
- Black
- Native American, Natives of the Hawaiian Islands
- Asian
- Native Hawaiian
- Two or more races

Local Supports

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EdCentral Beginning Teacher Survey

Did you have a mentor during the 2010-2011 school year? (check all that apply)

☐ Yes, I had a mentor as part of an official mentoring program
☐ Yes, I had an informal mentor (e.g., I got advice from my host or a colleague provided support and assistance unofficially)
☐ No, I was on my own most of the time.

Formal Mentoring Program

How beneficial has participation in the district or building mentoring program been for you?

Not Beneficial  Slightly Beneficial  Beneficial  Very Beneficial

I found the local mentoring program to be: ______

Comments: ______

What recommendations, if any, do you have for improving the local mentoring induction program?

Supports and Technology

How often did formal or informal mentoring interactions occur through the use of online communications?

Daily  Few times a week  Few times a month  Once a month  Once a year  Not at all

Email: ______
Facebook, MySpace, etc.: ______
Twitter: ______
Skype or other audio/video chat: ______
Instant Messenger (e.g., AIM): ______
Teleconference: ______
Electronic or written form of online or in-person management system: ______
Other (please specify): ______
EdCentral Beginning Teacher Survey

What were your impressions when you first heard about using Skype for classroom observations?

<table>
<thead>
<tr>
<th>Using Skype and Skreen to support your teaching</th>
<th>Great Idea</th>
<th>Good Idea</th>
<th>No opinion</th>
<th>Bad Idea</th>
<th>Awful Idea</th>
</tr>
</thead>
</table>

Please explain:

Would you consider using Skype and Bluetooth for classroom observations in the future?

☐ yes
☐ no
☐ maybe

Please explain:

Just-in-Time Sessions in Kinsdale

Which EdCentral Just-in-Time sessions did you attend in the Kinsdale Board room?

☐ August 9th Welcome
☐ August 10th Classroom Management
☐ August 11th Data Literacy, Analyzing
☐ September 15th Technology, Quality Practices
☐ Some of the above

Just-in-Time Benefits

How beneficial were these Just-in-Time sessions in Kinsdale?

<table>
<thead>
<tr>
<th>I found the session(s) that I attended to be:</th>
<th>Not Beneficial</th>
<th>Slightly Beneficial</th>
<th>Beneficial</th>
<th>Very Beneficial</th>
</tr>
</thead>
</table>

Comments:

EdCentral Beginning Teacher Survey

Reasons for Absence (PTA)

Select the option(s) that best describe the reason(s) for not attending one or more of these Just-in-Time sessions in Kinsdale:

☐ Not interested in session(s)
☐ Distance of the session
☐ School-related schedule conflict
☐ Non-school related schedule conflict
☐ Too busy
☐ Too far away
☐ Others

Please elaborate:

GoToMeeting

Which EdCentral GoToMeeting sessions did you attend?

☐ October 28th, TeamWork, Skype
☐ January 18th, New Year Resolutions and Reflections
☐ None of the above

GoToMeeting Benefits

How beneficial were these Just-in-Time sessions using GoToMeeting?

<table>
<thead>
<tr>
<th>I found the session(s) that I attended to be:</th>
<th>Not Beneficial</th>
<th>Slightly Beneficial</th>
<th>Beneficial</th>
<th>Very Beneficial</th>
</tr>
</thead>
</table>

Comments:

Reasons for Absence (GoToMtg)
EdCentral Beginning Teacher Survey

Select the option(s) that best describe the reason(s) for not attending one or more of the Just-in-Time sessions using GoToMeeting:

☐ Not interested at all
☐ Unaware of the session
☐ School-related schedule conflict
☐ Other working related schedule conflict
☐ Too busy
☐ Technology challenges
☐ Other

Would you consider participating in future EdCentral GoToMeeting opportunities?

☐ Yes
☐ No
☐ Maybe

Please specify:

EdCentral Recommendations

What recommendations do you have for how the EdCentral Educational Cooperative can improve the services provided for beginning teachers throughout the region? This includes face-to-face opportunities, online activities, etc.

Professional Technology Usage

EdCentral Beginning Teacher Survey

Considering only the LAST TWO MONTHS, rate the extent to which you used (on average) the following internet-based tools for PROFESSIONAL support, learning, and/or resources:

- Daily
- A couple times a week
- A couple times a month
- Once a month
- Once
- NA

General education discussion forums
General education discussion
General education discussion
General education discussion
Online course search and/or professional development
Shopping
Instant messaging (text)
Audio or video Chat
Reading blogs
Lecture or educator email groups
Viewing lesson to participants in video
Resource websites
Teaching strategy websites
Book mark websites
Facebook, MySpace, Twitter
Discussion boards
Other (please specify):

How have you benefited PROFESSIONALLY from internet-based tools, interactions, and resources?

What are the challenges or weaknesses of using online interactions, tools, and resources for PROFESSIONAL purposes?

Personal Technology Usage
EdCentral Beginning Teacher Survey

Considering only the **LAST TWO MONTHS**, rate the extent to which you (on average) used the following internet-based tools for **SOCIAL** or **PERSONAL INTEREST** purposes:

<table>
<thead>
<tr>
<th>Daily</th>
<th>Several times a week</th>
<th>Couple times a month</th>
<th>Once a month</th>
<th>Once</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>Discussion forums</td>
<td>Blogs</td>
<td>Social networking (site)</td>
<td>Audio or video chat</td>
<td>Reading blogs</td>
</tr>
</tbody>
</table>

**Final Thoughts**

Is there anything else you would like to share regarding your experiences with Induction/mentoring, the EdCentral program, or the use of technology?

Would you be willing to participate in a focus group or one-to-one interview to further discuss your first-year experiences?

- [ ] yes
- [ ] no

Thank You!

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EdCentral Beginning Teacher Survey

Thank you very much for your participation and contribution to the study!

In appreciation of your time and contribution to this study, we would like to include you in a drawing for a $10 Amazon gift card. Two gift cards will be awarded, and your chances do not increase with your number of responses. Winners will receive an emailed gift card directly from Amazon.co.uk by the end of the session.

In order to contact focus group participants and to notify the winners of the Amazon gift cards, we need to ask for your email address. This information will only be accessible to researchers and will only be used for the contact purposes described above. Email addresses will be removed from the survey data and destroyed immediately following the study's completion.

**Email address:**

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