12-2013

Understanding Contradictions in Teacher-Learner Identity, Digital Video, and Goal-Directed Activity in a Blended Graduate Reading Education Course

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To the Graduate Council:

I am submitting herewith a dissertation written by Jennifer K. Lubke entitled "Understanding Contradictions in Teacher-Learner Identity, Digital Video, and Goal-Directed Activity in a Blended Graduate Reading Education Course." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

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Understanding Contradictions in Teacher-Learner Identity, Digital Video, and Goal-Directed Activity in a Blended Graduate Reading Education Course

A Dissertation Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Jennifer K. Lubke
December 2013

Dedication

My son is playing with Legos. "What are you building, Henry?" I ask him. "I don't know," he shrugs. "I have to finish making it!"

In *Writing the New Ethnography* (2000), H.L. Goodall described scholarship as a process of locating yourself in the "storyline" of your discipline. Scholarship requires wide reading and daily writing. Scholarship might be described as "building your head" (p. 51).

I think "to build a head" is a lot like a 4-year-old playing with Legos.

This project is dedicated to my children, Henry and Dovie Lubke, and all children everywhere who remind us daily how to be "expert" learners.

Acknowledgements

I would like to acknowledge the contributions of my dissertation committee: Dr. Anne McGill-Franzen, Dr. Stergios Botzakis, Dr. Blanche O'Bannon, and Dr. Lisa Yamagata-Lynch. Thank you, all of you, for your kindness, patience, and mentorship over the years.

As the first female on both sides of the family to earn a college degree, I would be remiss not to recognize the loving support and sacrifice of my parents. I share this accomplishment with my late father, Karl W. Koch, Sr., who once told me he would have enjoyed teaching at the college level if it were not for having to write a dissertation. He said he had a "real problem" with the powers that be telling him he needed some piece of paper to be a good teacher. Well, Dad, I have that "piece of paper" now, and I am going to make good on it.

A much-deserved thank you also goes to my mother, Verne Larson. Since I was admitted to the PhD program nearly five years ago, she has been on call, picking up kids from school (including me), heating up suppers, helping with bedtimes, and being an all-around good sport about the sometimes thankless job of "stay-at-home granny."

Last, I must thank my life partner, Ron Lubke, who, at the start of my teaching career many years ago, quipped that he felt like a sponge that needed wringing out. I think he has graduated to industrial-grade chamois cloth in terms of the amount of stress and confusion he has had to absorb over the last four years. Life is messy, and I can't think of anyone else I'd rather share it with than you.

Abstract

More teachers are experiencing professional development within blended/virtual learning communities, which I consider a fruitful avenue for expansion of new literacies in K-12 classrooms. However, new literacies challenge traditional structures in education even as new rules of corporate-sponsored reform and high-stakes accountability serve to reinforce these structures. Within this context of contradictions, a cohort of teachers from a rural, remote county in the southeast United States participated in a blended learning environment in their final semester of graduate-level coursework in Reading Education. Some of the teacher-learners, whose own attitudes and motivations toward technology were as diverse as the tools themselves, resisted new modes of learning, especially self-reflection through digital video. To better understand situational forces as well as the participants' own identities as sources of resistance, I designed an activity-theoretical study that draws upon Cultural-Historical Activity Theory (CHAT), New Literacies, and multiple realities perspectives. My data sources included observations and field notes, analysis of course documents, and interactive interviews. I applied grounded theory to code the data and used the initial findings to draft a case study report. I then used CHAT's heuristic tools to graphically depict the tensions of joint activity between the school system and university course settings. I also developed activity portraits of three teacher-learners. My findings suggest the following implications for blended learning in Reading Education: seek better coordination and articulation of joint activity, avoid being overly prescriptive of digital tools, and engage participants more frequently in open dialogue about problems and issues. The findings also point to an enhanced role for CHAT to stimulate a theory-to-practice feedback loop for the practitioner-researcher.

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Chapter One: Introduction

In an email dated Dec. 6, 2012, I received a message from a student enrolled in a blended/online Reading Education course, in which I served as teaching assistant. The student, Grace (a pseudonym, as are all participant and location names used throughout this dissertation) sent the email in reply to my query about the status of her technology post-survey:

> *Jennifer,*
>
> *… I did not answer it. I do not know how to answer it. I did not indicate anything at the beginning of the semester that I need to explore (technologically) and I still do not have anything to add to my list – I feel like I am where I need to be technologically. I blog with my students. I present using PowerPoints, Prezi, ActivInspire, and Smart Notebook. Next semester, my students are going to create a wiki….I have been shooting and editing video since 1986. My entire Master's degree was online, and I have had one additional class while getting this EdS at UT that combined f2f meetings with synchronous online meetings. If the tech guy at school is absent, they call me to fix computers (sometimes they call me even if he is here). The list goes on and on. If you have suggestions as to what I can do to answer the tech survey, please let me know.*
>
> *Thanks,*
>
> *Grace*

I immediately replied to Grace, and the following exchange ensued:

Grace,

I guess you just answered it. BTW, are you or anyone in your system (that you know of) using tablets, eReaders, etc., for express purposes of supporting reading comprehension? I was at a [conference] session last week in which one presenter from a university in Virginia said there are no iPad apps for aiding comprehension. That's wacky.

Jennifer Lubke

Jennifer,

I have not looked closely at apps for aiding comprehension. I am the only one in the school with an iPad. I use it in my classroom to organize and check out/in books. I have PDF files of running records loaded and I use it to do those, but I would have to physically hand the iPad to a student and I am not quite comfortable with that yet.

Grace

In light of the first email, I was struck by Grace's final message about iPads, and it fed my interest in teacher dispositions toward technology, an interest that had been growing since the start of the Fall 2012 semester, when several of Grace's classmates (all teachers from the same professional cohort) overtly resisted the introduction of blended/online learning. Grace, for that matter, did not resist the online aspect of the course, but she did opt out of the technology pre-survey administered in September on

similar grounds as with December's survey. (See Appendix A for the technology pre- and post-surveys.) These events are, in fact, quite fascinating, considering Grace's self-positioning as a technology expert as well as the range of technology expertise represented by her colleagues, most of whom completed both technology surveys. Take, for instance, Grace's classmate Kathy, who completed her post-survey thusly:

> *I have used quite a bit of technology in my educational career already. To some extent, I am doubtful how much technology helps young children when learning to read (which is the focus of my job). Technology is often the flash that may catch the students' attention. This may be a more vague answer than what you are looking for, but my #1 technology learning goal is probably to make sure I know and can use whatever new technologies emerge that may help students learn. I am familiar with many forms of technology (PowerPoint, Publisher, movie making, etc.) and have taught students to use them, and even teachers how to use them in classrooms….Since I feel confident with most technologies that are out there, my #1 has to be staying abreast of new technology.*

Understanding the differences between Grace's and Kathy's stances toward the technology survey in particular, as well as toward learning technology in general, was a primary goal of this study. What was the nature of their experience as members of a blended/online learning community during the Fall 2012 semester? And what implications can be drawn from the learning community, which was set up, in part, to support their growth as practitioners of new digital literacies? Both Grace and Kathy

profess a high level of expertise, but their statements about technology learning suggest "the possibility that the effects of teacher education programs can only be viewed in conjunction with a variety of variables having to do with the settings in which teachers learn and practice their work" (Grossman, Smagorinsky, & Valencia, 1999, p. 2).

Statement of the Problem

The problem this study will address is that research on teachers and technology gives little consideration to the "variety of variables" within settings of practice and, thus, may be partly to blame for a continuing problem of superficial, "band-aid" style (Atkinson & Swaggerty, 2011, p. 100) technology use in K-12 education. Scholars generally agree that the quality of technology integration in the schools is not keeping pace with rapid, ever-changing societal norms and expectations (Hutchison & Reinking, 2011; Karasavvidis, 2009; Lawless & Pellegrino, 2007). This situation could prove devastating to Grace and Kathy's field, Reading Education, given that digital technologies "provide unique affordances for reading and writing and thus they require unique skills, strategies, and dispositions that may build upon, but also exceed, those associated with conventional printed forms of communication" (Hutchison & Reinking, 2011, p. 313). The "new literacies," as they are called, must gain a firm foothold in K-12 education "because they are central to the use of information and the acquisition of knowledge" (Leu, Kinzer, Coiro, & Cammack, 2004, p. 1571). A well-documented barrier to successful integration of the new literacies into K-12 classrooms is an unfortunate disregard by university researchers, technology coordinators, and school leadership for situational factors related to teachers, learners, and school contexts (Labbo

& Reinking, 1999; Mishra & Koehler, 2006; Pierson, 2001).

I came to understand the problem of "context neutrality" (Mishra & Koehler, 2006, p. 1033) in the research base when I prepared a historical review of Technological Pedagogical Content Knowledge (TPACK), a conceptual framework for understanding effective teaching with technology (Koehler & Mishra, 2008; Mishra & Koehler, 2006; Voogt, Fisser, Pareja Roblin, Tondeur, & van Braak, 2012). I learned that, insofar as the TPACK construct is concerned, the assessment, either qualitatively or quantitatively, of teachers' technology knowledge is underexplored in *specific* subject area domains, especially literacy (Voogt et al., 2012). In addition, researchers generally fail to consider the influence of institutional forces as well as individual participants' beliefs with regard to technology integration. It is rare, for example, when the researcher asks, as did Pierson (2001), "What role do exemplary technology-using teachers perceive for the computer technology in their classrooms for themselves and their students?" (p. 415). In her study, Pierson documented how the term "technology integration" connoted three very different concepts to three different teachers, thus influencing the level of technology innovation they achieved and the level of expertise they attained in the classroom.

Few studies, however, tap into the role played by emotions, motivations, attitudes, and beliefs – the "black box" of educational research (Geijsel & Meijers, 2005, p. 420). As long as research makes no account for difference, such as the contrasts between two experts like Grace and Kathy, we should not be surprised when cognitive development (TPACK) alone fails to foment widespread, sustainable paradigm shift in K-12 teaching and learning. As Geijsel and Meijers (2005) reported, "In the literature, the formation of

teachers' professional identity is seldom conceptualized as a learning process…. How this process of integration works, and how integration can be realized, remains to be explored" (p. 423). My overarching concern, then, was to design a study that does not contribute to the ongoing problem of context neutrality in research on teachers and technology. Therefore, I took up Geijsel and Meijers' identity learning agenda and examined it from a sociocultural perspective, specifically Cultural-Historical Activity Theory (CHAT) and its analytic tool, activity systems analysis. According to Sannino, Daniels, and Gutierrez (2009), "Activity theory seeks to analyze development within practical social activities. Activities organize our lives....Through activities, we also transform our social conditions, resolve contradictions, generate new cultural artifacts, and create new forms of life and the self" (p. 1). In the concluding segment of this chapter, I argue that activity theory is particularly well suited for documenting the iterative process of teacher professional identity development.

Purpose of the Study and Research Questions

The purpose of this study was to describe the teacher-learner experience during a blended/online, graduate Reading Education course. If teachers' beliefs are inextricably bound to the outcomes of their professional development experiences, as the essence of Geijsel and Meijers' (2005) creative process of "identity learning" would dictate, then this study initially sought to understand the teacher-learner's stance toward digital technologies in a newly reformatted graduate Reading Education course. Above all, I wanted to understand participants' developmental paths along the novice-to-expert

spectrum and how their self-understandings as users of digital technologies influenced and were influenced by the blended course setting.

However, the primary sociocultural assumptions of my theoretical frameworks and analytic approach led me to consider other contextual elements that influenced participant experience. The teacher-learners' enactments with new literacies processes and practices took place against a backdrop of systemic contradictions and localized tensions that I could not ignore. As such, I continually winnowed and refined the preliminary set of questions through an iterative process of data collection, interpretation, and representation. The specific questions that ultimately served to frame this study were:

- What situational forces influenced the teacher-learners' experiences as members of a blended learning community?
- What were the teacher-learners' perspectives while using new literacies tools and practices within a blended learning community?
- What did the teacher-learners' articulations reveal about the role of identity during the blended learning experience?

In the remainder of this chapter, I define key terminology used within this study, briefly discuss societal and educational contexts that motivated the study, and describe my positionality as a teacher-learner and researcher and how these subjectivities connect to basic theoretical assumptions I brought to this inquiry.

Definition of Terms

I have used the following terms and abbreviations as consistently as possible through the remainder of this and all subsequent chapters. My research design suggested

a synergistic mapping onto of different research fields and theoretical perspectives (CHAT, AT, IT, new literacies, and so on), which resulted in an unfortunate predominance of initials and acronyms. Moreover, some terms may seem self-explanatory but draw added connotation from my theoretical orientation and assumptions. Although I find some terms ("digital literacy" versus "new literacy," for example) to be nearly synonymous and interchangeable, for the sake of clarity, I consolidated these terms.

AT – Activity Theory; an innovation originating from the Soviet school of psychology that attempts to resolve subject-object and internal-external dichotomies by focusing on human activity, "which inherently includes both mental activity and observable activity" (Yamagata-Lynch, 2010, p. 20). AT includes an analytic method called "activity systems analysis" for understanding systemic implications in complex learning and work environments.

blended learning – a mode of instruction, also referred to as "hybrid," which combines face-to-face interaction between students and instructor with synchronous and/or asynchronous online interaction and other forms of computer-aided activities

CHAT – Cultural-Historical Activity Theory; a theoretical and methodological frameworks originating from Soviet psychology and the work of Vygotsky and his followers. Disputing prevailing efforts in psychology to dichotomize subject and environment, Vygotsky put forth concepts such

as mediated action, internalization, and the Zone of Proximal Development (ZPD) to support his claim that consciousness is a product of continual interaction between subject and environment.

contradiction – a fundamental concept of activity theory. A "contradiction" is "a fact of life," something that exists in the environment that participants have no control over. Contradictions are inherently systemic and pre-existing. Contradictions bring "tensions" to activity. For example, a budget shortfall is a common contradiction in K-12 education, and strained budgets are a source of tension in the daily activity of schools.

ELA – English/Language Arts

ICTs – Information and Communication Technologies; these include blogs, social networking tools, virtual conferencing software, and other digital and Web-based tools that have secured a firm foothold in global, industrial society

IT – Instructional Technology

multiliteracies – also “multiple literacies;” expands the definition of literacy to include “reading” and “writing” of a diversity of texts, including multimedia and digitized texts, but also speech and discourse, the visual and performing arts, music and popular culture, broadcast news media, and traditional print

New Literacies – a field of study that undertakes to explore literacy as a social and cultural phenomenon

new literacies – the ever-expanding field of practices and processes enabled by the proliferation of digital and Web-based ICTs. The "new literacies" refer to, among other things, the hands-on production of Web-based products, such as digital stories, blogs, wikis, and podcasts, which the reader should understand to be a subset of multiliteracies.

PD – Professional Development; refers to all forms of teacher education beyond preservice teacher education and initial licensures

teacher-learner – a term that positions teachers as learners generally and acknowledges a professional disposition that views professional growth as an outcome of continual reflection in and on practice; specific to this study, a term that refers to the study participants, who were all full-time classroom teachers and/or reading specialists in addition to being enrolled in a graduate-level Reading Education program

tension – closely related to the concept of "contradictions" in activity theory. A "tension" is created by systemic contradictions. Participants perceive tensions while they are engaged in activity. Tensions are local and specific to an activity, or they may be introduced into an activity setting. For example, establishing a deadline (or any rule, norm, or expectation) can bring tension to an activity. "Tensions can affect the subject's ability to attain the object by taking a role as an obstacle, making it difficult for the subject to attain the object, or by taking a role as enabling influence for the subject to attain the object" (Yamagata-Lynch, 2010, p. 2).

TPACK -- Technological Pedagogical Content Knowledge; a conceptual framework for describing how teachers develop expertise in the meaningful integration of instructional technology into classroom-based practice; also occasionally "TPCK"

Context & Motivation

In the fall of 2009, I collaborated on a study that examined changes in student achievement when podcasts are used in place of lecture. The study involved multiple sections of an instructional technology (IT) methods course for preservice teachers. The control group received traditional, teacher-centered lecture accompanied by presentation slides. The experimental group accessed and listened to a series of podcasts prior to attending each class. In creating the podcasts, my colleague Jeff and I attempted to mimic face-to-face lecture as closely as possible. We strove to maintain consistent, high-quality production values, including sound quality and communication style as well as optimal podcast lengths. Using a multimedia editing application, we combined our digital audio recordings with pre-existing slideshow text and exported into various file formats suitable for play on portable devices and computers. By our estimations, each of the 18 podcast episodes took no less than 4 ½ hours to produce (personal communication, April 11, 2011).

Despite our best efforts, some participants in the study complained that the enhanced podcasts lacked interactivity, such as hyperlinked URLs, and did not elaborate basic information already contained in the required course textbook. In reflecting on the final output of our labor, Jeff summoned forth a common expression that represents

anathema in our field: “death by PowerPoint.” It seemed Jeff and I, two passionate educational technologists and reasonably informed instructional designers, had invested upwards of 80 hours in hands-on, problem-based learning with and through technology, only to produce the auditory equivalent of “death by PowerPoint.” How did this happen? As a former secondary classroom teacher who firmly believes in the affordances and value of 21st century ICTs, I wondered what were the conditions necessary for successful experimentation with digital and Web-based technologies. My own year-long inquiry into this question culminated in a reflexive, ethnographic account of the teacher-as-learner taking up new literacies (Lubke & Beard, 2011).

Three years later, I found myself asking similar questions in relation to my work with in-service teachers in a newly hybridized Reading Education course. Through social interaction and engaged participation, I wanted to understand how blended learning affects teachers’ attitudes, beliefs, and commitments with regard to 21st century ICTs and, to equal extent, how teachers’ attitudes, beliefs, and commitments shape the blended learning experience.

Two broad, societal undercurrents define this study. First, the high-stakes accountability movement, which was codified in 2002 when NCLB was signed into law, has placed teacher education and PD in the foreground (Allington & Cunningham, 2007; Dede, Ketelhut, Whitehouse, Breit, & McCloskey, 2009; Lawless & Pellegrino, 2007; Leu et al., 2004; Ravitch, 2010). Second, a revolution in digital and Web-based ICTs has substantially increased capacities to communicate, collaborate, and create across mainstream society (Leu et al., 2004; Richardson, 2010; Solomon & Schrum, 2007). The

school reform and technology trends converge in ways that have significant impact on teachers and students. For an example one need look no further than the new Common Core State Standards (CCSS), adopted in most of the 50 states (Dalton, 2012; Hutchison & Reinking, 2011; Kinzer, 2010). The CCSS for literacy, while never explicitly mentioning ICTs, declare that the college-bound or career-ready student must be able to "analyze and create a high volume and extensive range of print and nonprint texts in media forms old and new. The need to conduct research and to produce and consume media is embedded into every aspect of today's curriculum" ("CCSS for English language arts," 2010, p. 4). As Dalton explained, "The standards assume that being literate means being *digitally* literate [emphasis in original]," (Dalton, 2012, p. 333). Yet another technology-related ramification of the CCSS, one with more immediate public impact and headline grabbing potential, is states contending with how to develop capacity in both personnel and infrastructure for administering the computerized Common Core tests.

The CCSS only mirror what literacy educators and theorists have long understood: the very meaning of the word "literate" is in a state of constant flux (Kinzer, 2010; Kist, 2004; Lankshear & Knobel, 2006, 2007). As Kinzer states,

> Language arts teachers are in a challenging and enviable position with regard to the intersection of literacy and digital environments – challenging because technology changes rapidly, and new "new literacies" will certainly arise; enviable because of the tremendous excitement, motivational value, and possibilities for teaching with and about social

> media and digital texts, and because of their opportunities to talk with students about the digital environments they use. (p. 59)

In acknowledgement of a widespread disconnect between students' in-school and out-of-school literacy practices, several researchers have investigated how teachers leverage new literacies in service of educational goals as well as the personal development and overall well-being of students (Atkinson & Swaggerty, 2011; Cervetti, Damico, & Pearson, 2006; Kist, 2004; Lankshear & Knobel, 2007, 2011; Leu et al., 2004; New London Group, 1996; Spires, Hervey & Watson, 2009). Leu et al. (2004) wrote, "Because teachers become even more important to the development of literacy in a world of new literacies, greater attention will need to be placed on teacher education and professional development" (p. 1599). The new literacies carry significant implications for teacher PD.

Studies suggest teacher expertise is the deciding factor in successful technology integration, more important than reliable Internet connectivity and equitable access to computer hardware and software (Hutchison & Reinking, 2011; Lawless & Pellegrino, 2007). In fact, the PD imperative associated with the new literacies has been framed as a social justice issue (Leu et al., 2004; Marsh, 2001). Lawless and Pelligrino (2007) warned "the digital divide could actually widen over time with increased investment in technology in schools unless urban and rural K-12 educational settings attract and maintain a teaching force equipped to use technology effectively in support of student learning" (p. 578). We must implement the New Literacies perspective in classrooms or risk "developing two classes of citizens: one that is largely poor, minority, and

challenged by the new literacies required for reading and learning on the Internet and another that is largely advantaged, white, and excels with the new literacies…" (Leu et al., 2004, p. 1600).

The new literacies portend a sort of professional impoverishment for teachers as well, unless old PD models evolve to keep pace with the changing digital tools. Each new high-tech innovation guarantees tenuous status along the novice-expert continuum for even the most adept users, requiring a new orientation to lifelong learning. The research literature presents a compelling argument against one-shot workshops that emphasize specific skill sets and procedural knowledge of tools, arguing instead for approaches in which teacher-learners engage in authentic, hands-on problem solving with technology and reflect metacognitively on the value-added by technology in relation to their disciplinary content and pedagogical stance (Atkinson & Swaggerty, 2011; Harris, 2008; Hughes & Scharber, 2008; Koehler & Mishra, 2008; Mishra & Koehler, 2006; Spires et al., 2009). Lankshear and Knobel (2006), for instance, suggested educators gain "insider" sensibilities through hands-on exploration of new technologies that lead to "educationally fruitful applications of insights" (pp. 246-247). They wrote, "The question is how to apply insights in ways that do not compromise the integrity of either the 'popular' cultural practices in question or our educational purposes" (p. 247).

Moreover, virtual learning communities, such as Grace and Kathy participated in, provide an all-in-one PD solution by immersing teacher-learners in the online world, made relevant by continual calls for preparing U.S. students to compete in 21st century global markets (Dede et al., 2009). Dede and colleagues argued that online PD "offers a

different set of tools and poses a different set of research issues for how teachers become fluent in new technologies (many of them online interactive media) than face-to-face professional development has encountered" (p. 10). They called for a refined research agenda that considers "the terra incognita of new venues, new methods, and new objectives" (p. 10).

Unfortunately, the PD research agenda is too often framed by broad-based appeals to "educational purposes" and global competition at the expense of the participants involved – the teacher-learners. Teacher development expert Gerald G. Duffy has critiqued the field for its propensity to draw on the extrinsic authority of pedagogies, programs, and techniques, while ignoring intrinsic qualities such as the teacher-learner's "professional vision" (Duffy, 1998, p. 780) or, in the case of technology, what Baylor and Ritchie (2002) referred to as "openness to change" (p. 395). In a similar vein, Hagood (2003) acknowledged the importance of preparing a 21st-century citizenry to live, learn, and work in "a media-saturated world" but argued that we remember "the import of media and online literacies in our own lives and to our identities ….[I]t is also crucial, I believe, for reading researchers and teachers to be interested in media and online literacies because these literacies affect us, too" (p. 387).

Those identities and dispositions toward technology are infinitely variant (remember Grace and Kathy, for example), but, for the most part, literacy teachers already regard 21st-century ICTs as important, if only on a superficial level. This was a major finding of a 2011 study conducted by Hutchison and Reinking. Citing a lack of data broadly characterizing literacy teachers' beliefs about ICTs, Hutchison and Reinking

surveyed nearly 1500 literacy teachers from across the U.S. in effort to create a "broad backdrop" (p. 314) to better contextualize and make sense of results of smaller studies. Another major finding, based on a statistical model they devised, is that a teacher's stance toward ICTs may be a better predictor of ICT integration than the amount of support or training he or she receives, which further underscores "the importance of addressing teachers' beliefs and perceptions in any effort to increase the integration of ICTs into literacy instruction" (p. 330). Appropriately designed PD may be all that is needed to construct a "short bridge" between surface-level technology proficiency and "deeper curricular commitments and understandings" (p. 331).

What is appropriately designed PD, then? It might resemble the graduate-level media studies course in which Spires and colleagues (2009) facilitated a six-phase "inquiry learning project" with 20 in-service ELA teachers (p. 4). The project culminated in an innovative lesson for use in the classroom and a short video documentary about the lesson design. In addition to survey items and online reflections, Spires et al. used analogies generated by the teacher-learners to assess their "metacognitive transfer for newly developed insights" (p. 16). A synthesis across data sources enabled the researchers to hone in on two themes: 1) technology as catalyst for teacher creativity and 2) teacher change through innovation and collaboration. At the conclusion of their study, Spires et al. wrote,

> Encouraging and supporting educational innovation that allows ELA teachers to engage in teaching and learning with technology in ways never before experienced is both valuable and powerful; many teachers struggle

> with how to develop "new minds" for 21st century teaching to make innovative practices a reality in their classrooms. (p. 34)

Indeed, demands for teacher change combined with changing conceptions of literacy make for a potent PD imperative, principally for the literacy teachers themselves, who must not only "be in the vanguard of integrating ICTs" (Hutchison & Reinking, 2011, p. 313) but must also maintain firm footing on a continually shifting terrain of literacy curriculum and instruction. Their "struggle" toward "new minds" is not well understood. Speaking generally of teacher knowledge formation and school reform, Geijsel and Meijers (2005), observed that the literature base so far does not contribute "understanding of *how* [emphasis in original] learning processes of the various significant actors within the school take place, and also *how* these learning processes can contribute to educational improvements" (p. 422). The need for authentic assessments of teachers' "learning-in-progress" (Angeli & Valanides, 2009, p. 162) suggests heavy implications for future research in the qualitative vein.

I return now to the memory of my novice podcasting efforts, when I encountered several frustrations, struggles, and epiphanic moments. Using a method called "interactive interviewing," my podcasting colleague and I revisited our struggles through a semester-long series of informal, yet intentional, conversations about our experiences as first-time podcasters of course content. The resulting transcripts from the interactive interview sessions possessed a strong narrative arc that detailed our "learning-in-progress." The storyline peaked when we gained insight into the inherent problem of the original podcasts and then brainstormed an on-the-spot solution to mitigate negative

student perceptions and a lack of student buy-in toward the integration of podcast-as-lecture. In the final write-up and presentation of our collaborative inquiry, we stated as an implication for future study the continued exploration of the role that collegial dialogue might play in tracking and describing teachers' technology learning. That recommendation, along with the present study in hand, may be viewed as a direct outgrowth of my own positionality as a teacher-learner

Statement of Reflexivity

An interest in human interaction and use of tools and a respect for differences in cultural surroundings have figured prominently in my own pathway as an adult learner; although, I only recently had access to the declarative knowledge with which to describe these basic tenets of Vygotsky's sociocultural theory. So, I was drawn to sociocultural theory even before I knew what it was. As a graduate student for six of the last seven years, I have enjoyed the privilege of time in which to "know my own mind" (Duffy, 1998) on such matters and to reconcile the institutional "disjunctures" (Grossman et al., 1999, p. 3) between my preservice preparation at the University of Texas and 11 years of in-the-trenches classroom teaching. Thus, I formulated my research questions in a manner similar to what is described by Kilbourn (2006), who wrote, "Problems are usually constructed out of a complex interplay among one's own thinking about an issue, one's own experience, and one's understanding of the research literature" (p. 539).

For the last three years of my high school teaching career, I collaborated with preservice teachers in the classroom and also served on my school's mentoring team. These opportunities were profoundly important to me because, for the first time in nearly

a decade of teaching, I felt like a member of a professional learning community. I experienced firsthand the power of social interaction as a means toward cognitive development. Interestingly, during this same time period, I was also trying to infuse my classroom practice with Internet tools and project-based learning but was stymied by a lack of technical proficiency and pedagogical know-how. Even in a most collaborative and nurturing professional environment, I felt isolated due to a lack of reliable, working resources and an absence of instructional leadership in regards to technology implementation and integration. This led me to seek a master's degree in IT.

I stepped out of the high school classroom in full-time pursuit of my master's degree, and, for a brief period of time, my sense of isolation grew *more* acute. I craved the social interaction and mentorship of my school-based professional learning community – until I learned about blogs, wikis, and online social networks! During a year-long independent study, I explored and critiqued a variety of Web-based applications, with a specific eye toward understanding how these tools might support traditional face-to-face mentoring models. In the process, I developed my own online learning network, which supplemented, extended, and enriched my formalized, face-to-face learning experiences at the university. In the absence of a practical classroom context and collegial community in which to test new skills and ideas, I found the development of my online learning network to be a richly rewarding experience.

After a two-year course of study in IT, I was indeed more facile with the digital technologies and more knowledgeable about new literacies, but I was also newly sensitized to a broad-scale paradigm shift that needed to take place before new literacies

would ever gain foothold in K-12 education. In other words, I was not going to effect change as one teacher working alone in a classroom. Consequently, my interests shifted to teacher education and PD. How might these programs be reformed in ways that would better enable preservice and inservice teachers to implement new literacies practices?

As happened during my experience converting classroom lectures to podcasts, my work facilitating blended learning for reading teachers prompted me to consider the impact of teaching and learning with 21st century ICTs on both myself and the other participants. I wondered how our social interaction and engaged participation in digital environments might help us achieve a "redefinition of what it means to teach" (Richardson, 2010, p. 154). I wondered about the effect of membership in a blended learning community on participants' identities and self-efficacy as teachers and learners with technology and how activity systems analysis can be used to understand this process.

To answer these questions, I relied heavily on my previous experience as a classroom teacher, hopeful that my professional background would lend me a degree of credibility and give me the necessary "in" to conduct a sensitive and thorough qualitative inquiry. On the other hand, I remained cognizant that my position as a full-time graduate student and teaching assistant within the university establishment might somehow compromise my authorial stance. I have not taught at a public school since 2005, nearly eight years out of the "long conversation" (Mercer, 2000, p. 45) unique to K-12 education. After years of intense, graduate-level study, far removed from the participants and contexts I claim to "know" so well, would I be blinded by my own narrow interests

and expectations? As I listened to participants' interactions, what common knowledge shared between them would I remember and make sense of? Moreover, what common knowledge of the participants' shared history have they taken for granted and chosen not to make explicit? Mercer suggested this is a "profound problem" for researchers and analysts (p. 175). He spoke from a discourse analytic stance but referred to several methodologies, including ethnography and "cross-disciplinary research," that "do justice to conversation as an interactive" (p. 174). Researchers working with the CHAT frameworks, for instance, frequently rely on discourse analysis tools to explore these dimensions, with the added benefit of a strong research-to-practice feedback loop for continual refinement and reform.

CHAT is ontologically complementary to my own subjective assumptions formed over time. To me, CHAT implies a much more hopeful view of human development than the cognitivist view. The sociocultural tradition, of which CHAT belongs, holds that human development is dynamic and evolving, not predetermined and hardwired. As Stetsenko (2005) explained, human consciousness does not form on its own but instead emerges "from collective practical involvements of humans with each other and the world around them" (p. 74). This "common fundamental premise" (p. 74) is not without its impediments, namely CHAT's perceived failure to account for the role of individual agency and intentionality within its profoundly social view of human development. This is an area ripe for innovation. Theorists are working to resolve these tensions, employing a critical stance "consistent with the very spirit of activity theory that postulates the centrality of transformative and creative—and thus also necessarily critical—activity as a

methodological tool for meaningfully dealing with any aspect of the world" (Stetsenko, 2005, p. 71). Additionally, Roth and Lee (2007) have argued, "Activity theory holds much promise for sharpening our thinking and praxis across three interrelated topics in learning research: motive or motivation, emotion, and identity" (p. 213). The exact way or method for doing this, however, is exceedingly vague. In the next chapter, I summarize a collection of activity theoretical studies from which I drew insight for my own research design. Then, in Chapter Three, I attempt a more thorough explication of a "unified theory of human development" (Stetsenko, 2005, p. 75).

Chapter Summary and Organization of the Study

Digital technology as "peripheral ancillary" to good teaching (Pierson, 2001, p. 427) is a fundamental problem that has occupied researchers and scholars for decades. As the opening anecdote of this chapter illustrates, a diversity of teacher attitudes and beliefs may provide a partial explanation for the limited impact of 21st century digital ICTs in K-12 education. To explore these issues in greater depth, I designed an inquiry into the experiences of literacy teacher-learners enrolled in a hybridized graduate Reading Education course. In addition to providing definitions for key terms and guiding concepts, this chapter clarified the context and motivation for this study, as well as my partiality as a teacher-researcher. This subjectivity influenced my engagement with the research literature and guided the formulation of the substantive and methodological frameworks of my study, which I will fully explicate in Chapter Two: Review of the Literature.

In Chapter Three: Methodology, I describe my methodological frameworks. I begin Chapter Three by making clear linkages between the epistemic and ontological assumptions of my frameworks and the personal subjectivities and assumptions already partially delineated in Chapter One. In addition, I discuss methods of data collection, data analysis, and data representation, and I outline limitations and delimitations. Of particular note in Chapter Three is the carefully constructed logic-of-justification (Piantanida & Garman, 2009) for use of Charmaz's version of constant comparative analysis (2006) with Stake's (1995) methods of instrumental case study design. I provide a clear articulation of my analytic methods as they align with the type and purpose of the case and the conceptual structure of the study. To further strengthen my logic-of-justification, I rely heavily on suggestions outlined by Yamagata-Lynch (2010) in my discussion of the compatibility between case study research, the CHAT tradition, and activity theory.

Chapters Four and Five comprise the analysis portion of this study. Because this study involved a two-step analytical approach (constant comparative analysis followed by activity systems analysis) that produced two distinct but related representations of data (a case study narrative and activity systems with graphics), I presented the analysis in two parts. I split the analysis into two chapters and bridge them together rhetorically at the conclusion of Chapter Four. This "writerly decision" (Piantanida & Garman, 2009, "Experiential Text as a Context for Theorizing," para 9) was made entirely in service to the reader. The chapter break demarcates the shift between research genres, from case study to activity systems analysis, and prepares the reader for my eventual move from the raw data of participant experiences to the conceptual phenomena of my study (Piantanida

& Garman). Finally, Chapter Six represents an integration of my findings, in which I discuss my interpretations, implications, and ideas for future inquiry before concluding the study.

Chapter Two: Review of the Literature

As I described in Chapter One, my initial review of the literature on TPACK, teachers, and the new literacies led to the formulation of preliminary research questions about teacher-learner perspectives on new literacies and the role teacher-learner identity plays in shaping experiences with new literacies practices and processes. Even as these questions evolved, I proposed to explore them through a substantive frameworks that weaves the New Literacies and multiple realities perspectives with the CHAT tradition. In Section I of this chapter, I describe this synthesis. Section II summarizes what the research base has to say about the new literacies and implications for teacher development and identity learning. Section III includes several examples of activity-theoretical studies of complex learning systems to demonstrate the ways researchers apply CHAT and its analytic methods. I located a variety of exemplary studies with methodological implications for my project, but I could not locate a single example of activity theory in service of understanding teachers' new literacies identity development, an issue I take up in the final major section of this chapter, Section IV: Significance of the Study.

Section I: Theoretical Frameworks

My research will be informed by a combination of theories and bodies of literature: (a) the New Literacies and multiple realities perspectives and (b) the CHAT frameworks.

The New Literacies and Multiple Realities Perspectives

Leu and colleagues (2004) put forth the New Literacies perspective to aid practitioners and researchers in making sense of the rapidly changing field of digital technology and its impact on the socially situated, historically grounded definition of literacy itself. Leu et al. identified three social forces that have greatly affected the nature and process of literacy and literacy instruction: global competition, the emergence of the Internet, and public education policy. The need for the New Literacies perspective is widely acknowledged across the literature by scholars and thinkers who struggle to make sense of "the double relation of meaning" problem of technology (Leu et al., 2004, p. 1585). In other words, technology imposes discrete skill sets and proficiencies in addition to "ideological meanings." It's a "web of practice and representation" (p. 1585). The challenge is perhaps felt most acutely in the field of ELA/literacy because being literate implies learning both *about* computers and *through* them. As Kinzer (2010) explained, "Definitions of literacy are constantly evolving, and our field is grappling with what it means to be literate – what it means to read, write, and communicate" (p. 53). Schmidt and Gurbo (2008), who prepare K-6 literacy teachers to use technology in the classroom, wrote, "Technology's presence in our lives, in schools and society as a whole, dictates the necessity to accommodate the influence electronic environments and digital media have had on literacy development and instruction" (p. 62)

Labbo and Reinking's (1999) theoretical essay on "Negotiating the multiple realities of technology," which Leu et al. (2004) cite, helps elucidate the New Literacies construct. According to Labbo and Reinking (1999), it is "pointless and futile" to assume

any sort of study of new literacies theory and practice without first considering the multiple realities of all stakeholders involved (p. 478). The influence of multiple realities leads to a "veritable kaleidoscope of variability" in research and practice (p. 478) and provides explanation for the "forces and trends" that limit or encourage the performance of new literacies (p. 481). Further emphasizing the basic pragmatism of multiple realities, the authors recommended the multiple realities perspective as a way to make research on ICTs more relevant and applicable to classroom-level literacy instruction. The authors noted "a common and unfortunate tendency to treat technology in relation to literacy as a monolithic, unidimensional *topic* [emphasis in original] and a corresponding tendency to oversimplify its use or potential use in literacy instruction" (p. 479). Leu et al. (2004) echoed that sentiment, writing,

> In short, we believe that a theoretical framework for the new literacies of the Internet and other ICTs needs to be grounded in these technologies themselves, taking advantage of the insights that a variety of different perspectives might bring to understanding the complete picture of the new literacies emerging from these technologies. (p. 1588)

Researcher reflexivity may ultimately determine the kinds of questions, interventions, contexts, and research designs we pursue and may lead us to examine why some areas of research grow and expand, while other areas – namely, digital ICTs vis-à-vis the subject-matter domains and teacher attitudes and beliefs – receive less attention from the academic community. Critical reflection of this sort is the essence of "negotiating multiple realities."

Is the New Literacies model and the multiple realities perspective a powerful enough combination to redress the theory-to-practice divide? Possibly, if combined with CHAT.

Cultural-Historical Activity Theory

Lev Vygotsky's cultural-historical psychology and its conceptual spawn, activity theory (AT), have been in active development since originating in post-revolutionary Russia (Kaptelinin & Nardi, 2006; van Oers, 2008; Yamagata-Lynch, 2010). At that time, Vygotsky resisted the trend in his field to strictly dichotomize subjects and environments in the name of "science" and aimed instead to create a unified framework for the study of humans (Hyman, 2012; Vygotsky, 1925/1997; Yamagata-Lynch, 2010). A central concept within this project was the role of mediating tools and artifacts in the interpersonal communication process, as represented by the classic triangle diagram, with subject, tool, and object at each of the vertices (Cole & Engeström, 1993; Yamagata-Lynch, 2010). Vygotsky (1978) introduced the concept of internalization to elucidate how, via mediated activities, humans acquire psychological adaptations called "signs" in a spiral of higher-order cognitive development (p. 57). Later, several of his colleagues, namely Aleksey Leontiev, elaborated on Vygotsky's work, adding a system of analytic principles that would become known as activity theory (Kaptelinin & Nardi, 2006; van Oers, 2008; Yamagata-Lynch, 2010).

Activity theory. Activity theory (AT) was introduced to international audiences in the 1970s and 1980s with English translations of Leontiev's work. Upon recognizing a continued "split" between materialist and idealist branches of psychology over the

simple, two-part formula of stimulus-response, Leontiev (1981) proposed adding a "middle link" to the formula: activity (pp. 45-46). Activity orients its subject "in the world of objects" (p. 46). Human development occurs through activity in a reciprocal, "looplike structure," in which development of the object content of activity results in cognition that further regulates activity in the object environment (p. 49). Using a developmental research methodology, Leontiev built his theory of "the evolutionary development of the mind," with *activity* as the basic unit of analysis (Kaptelinin & Nardi, 2006, pp. 51–52). Scandinavian theorist Yrjö Engeström eventually extended the model by introducing "community" into the subject-object interaction (p. 99).

Activity systems analysis. Engeström's innovations spurred uptake of AT in the West, helping bring it out of "Vygotsky's shadow" (Kaptelinin & Nardi, 2006, p. 3) and giving rise to a new methodological approach called activity systems analysis (Cole & Engeström, 1993; Yamagata-Lynch, 2010). Engeström turned Vygotsky's subject-object-tools triangle into a "triangular" diagram with nodes for rules, community, division of labor, and outcomes and suggested that each component interacts with and mediates the others (Kaptelinin & Nardi, 2006, p. 99). This expansion of the mediational triangle represents an *activity system* as a basic unit of analysis.

In a seminal paper in which they argue the advantages of CHAT for studies in distributed cognition, Cole and Engeström (1993) explain that activity systems can gain the status of cultural practices that outlive individual action, but these systems are not static and unchanging. "Consequently, activity systems are best viewed as complex functions in which equilibrium is an exception and tensions, disturbances, and local

innovations are the rule and the engine of change" (p. 8). Thus, CHAT is often applied in studies of complex learning systems (Cole & Engeström, 1993; Kaptelinin & Nardi, 2006; Roth & Lee, 2007; Roth, 2004; Schul, 2010; Yamagata-Lynch, 2010).

CHAT is especially suitable for investigating the teacher-learner experience with 21st century ICTs and new literacies (Barab, Schatz, & Scheckler, 2004b; Yamagata-Lynch, 2007) and provides analytical tools for interpreting dilemmatic aspects associated with ICTs in educational settings (Kaptelinin & Nardi, 2006; Roth & Lee, 2007; Roth, 2004; Yamagata-Lynch, 2007). In this case, the new literacies are the on-ramp to the spiral of development. After all, what is more paradoxical and destabilizing than the new literacies imperative, with its compelling potential for student engagement and learning matched in strength by its promise to challenge and complicate traditional classroom set-ups and pedagogies? A contradiction between two distinct "mindsets" circumscribes and constrains the impact of ICTs on the contemporary world in general, and K-12 contexts in particular. Lankshear and Knobel (2006) explain:

> The world is being changed in some fairly fundamental ways as a result of people imagining and exploring how using new technologies can become part of making the world (more) different from how it presently is (second mindset), rather than using new technologies to do familiar things in more "technologized" ways (first mindset). (p. 34)

According to Marsh (2001), “First mind-set” teachers are relative “newcomers” to technology and generally take it up for purposes of improving old practices. “Second mind-set” teachers view technology as fundamentally embedded in everyday life and are

generally more adept at leveraging its potential in classroom contexts (p. 1299). Lankshear & Knobel (2006) referred to these worldviews as "Newcomer" or "Outsider" (first mindset) and "Insider" (second mindset), with the pedagogy of New Literacies drawing heavily upon the emergence of the second. Ten years later it seems the contradiction persists based on Hutchison and Reinking's (2011) categories of technological integration (superficial, teacher-centered) versus curricular integration (complex, dynamic) for describing literacy teachers' perspectives on ICTs.

Section II: Review of the Literature

New Literacies and Implications for Teacher Education

Lankshear and Knobel (2006) maintain that living and learning with 21st century ICTs place complex demands on teachers and students: "Learners need new operational and cultural knowledge in order to acquire new languages that provide access to new forms of work, civic, and private practices in their everyday lives" (p. 16). In his overview of implications for policy and practice, Kinzer (2010) suggests "communication" between teachers and students about in- and out-of-school literacies as a "critical starting point" (p. 59). Marsh (2001) emphasizes the exploration of new pedagogies that go beyond mere skill development "to include knowledge and competencies that will enable all learners to access, use, and create a range of digital texts" (p. 1304). Richardson expresses the mandate as such: "If we fail to graduate students who are not able to create, sustain, and participate in these networks in safe, ethical, and effective ways, we've done them a disservice" (p. 149). There is general, widespread agreement that new literacies must be formalized in K-12 contexts, if only to

produce workers to compete in a 21st century global economy. What is less understood is how new literacies teaching and learning will gain traction in 20th century industrial era schools. Moreover, teachers, many of whom are "outsiders" and who would likely self-identify as such if asked, do not have the expertise or confidence to integrate new literacies tools and practices. Educational systems are simply not responding adequately to the new literacies imperative (Chandler-Olcott & Mahar, 2003; Committee on Enhancing Professional Development for Teachers, National Academies Teacher Advisory Council, National Research Council, 2007; Kist, 2004; Lankshear & Knobel, 2006; Richardson, 2010).

Worse yet, teacher education and PD providers, viewed by some as "conservative" in the sense of conserving practices of the past (Cervetti et al., 2006, p. 384), seem mired in decades-old behaviorist delivery models of sit-and-get workshops, competency checklists, and other strategies that are tool-centered rather than learner-centered (Cervetti et al.; Committee on Enhancing Professional Development for Teachers, 2007; Hofer & Swan, 2006; Mishra & Koehler, 2006). The disconnect between in-school and out-of-school technology practices is apparent more than ever in teacher education programs that are concerned with "equipping" teachers with predetermined skills sets rather than preparing them to "make sense of formal learning under challenging contemporary conditions" (Lankshear & Knobel, 2006, pp. 253-254). According to Chris Dede of the Harvard Graduate School of Education, "If teachers are going to prepare students for twenty-first century work, they have to understand twenty-first century work. . . . Thinking, working, and learning are now richly distributed in just

about every sector of society except education" (Committee on Enhancing Professional Development for Teachers, 2007, p. 4-5). Time and again in his field research of new literacies classrooms, Kist (2005) recounted "tension" between competing technology goals of teacher, students, and curriculum (p. 58). Fortunately, the research base, while admittedly scant (Leu et al., 2004), indicates that this tension can be productively leveraged to foment both systemic, collective reform as well as individual growth when we engage the teacher-learner in authentic, hands-on problem-solving with 21st century ICTs (Atkinson & Swaggerty, 2011; Cervetti et al., 2006; Hughes & Scharber, 2008; Karchmer, 2001; Kereluik, Mishra, & Koehler, 2011; Kist, 2004; Leu et al., 2004; Marsh, 2001; Spires et al., 2009).

Mishra and Koehler (2006) acknowledged the highly complex, situated blending of teacher knowledge when they updated Shulman's (1986) concept of Pedagogical Content Knowledge (PCK) to include Technological Content Knowledge. The resulting TPACK framework and its notion of "developing a nuanced understanding" (Mishra & Koehler, 2006, p. 1029) provide a way to make sense of technology integration. TPACK (or, "cognition" or "strategic knowledge" elsewhere in the literature) is one required element for successful new literacies PD. In my partial review of the research, I located a few articles about new literacies PD in ELA/literacy contexts, and even fewer that mentioned specifically TPACK as part of the substantive frameworks. Nonetheless, across the accounts of successful new literacies integration that I did read, I noticed five consistent themes: creation, confrontation, cognition, reflection, and transformation.

Creation. New literacies PD engages participants in hands-on problem solving with 21st century ICTs. "Viewing teachers' use of technology as a new literacy emphasized the role of the teacher as a producer (as designer), away from the traditional conceptualization of teachers as consumers (users) of technology" (Kereluik et al., 2011, pp. 15–16). In Mishra and Koehler's (2006) learning-technology-by-design model, the teacher is, in fact, re-oriented to the role of "curriculum designer." Authenticity across context, culture, and content is essential for the success of this approach, which enables teacher-learners "to transcend the passive learner role and to take control of their learning" (p. 1035). This resonates with Nicaise and Barnes (1996), who described "authentic activities in which students have control and self-initiated direction" (p. 206).

Whether "content-rich technology learning experience" (Hughes & Scharber, 2008), "activity types" instructional design (Harris, 2008), or "inquiry learning project" (Spires et al., 2009), each article/chapter presented a variation of hands-on, authentic engagement, in the same vein as Mishra and Koehler's (2006) learning technology by design method. Lankshear and Knobel (2006) advocate bringing "elements of the conventional and new that are often in tension within established educational set-ups and routines into a productive and risky 'conversation'" (p. 255). They suggest educators gain "insider" sensibilities through hands-on exploration of new technologies so as to better envision and develop pedagogies that will take students "from where they are to where we believe it is good for them educationally to go" (p. 246).

Confrontation. New literacies PD leverages dilemmatic aspects of 21st century ICTs. Koehler and Mishra (2008) described teaching as an already "ill-structured

discipline with a high level of variability" made more volatile by the flood of 21st century ICTs that are unstable and protean (pp. 4-7). This is the "paradox" of new literacies (Hofer & Swan, 2006, p. 195). The tools and practices associated with digital and Web-based 21st century ICTs represent a monumental increase in our capacity to communicate, collaborate, and create, but they also challenge "traditional notions of the teacher/learner/peer group relationships" (Marsh, 2001, p. 1303). This phenomenon is further compounded by the widespread adoption of new literacies practices (social networking, text messaging, uploading and sharing various forms of multimedia content) among children and adolescents, owing to the inherent utility, accessibility, and affordability of today's digital tools (Kinzer, 2010; Lankshear & Knobel, 2006; Richardson, 2010; Soloman & Schrum, 2007).

A frequently cited cliché regarding 21st century teaching and learning is that educators are preparing students for jobs that don't yet exist. Along those same lines, Mishra and Koehler (2006) reasoned that teacher technology training should prepare teachers to teach with tools that don't yet exist. Instead of conveying decontextualized, tool-specific content knowledge, they argued, teachers need generalizable skills and techniques that can be applied to the rapidly evolving field of digital technologies (p. 1023). Moreover, from the teacher-educator standpoint, Nicaise and Barnes (1996) warned that situated learning must be based on the premise of "cognitively guided" application of technology, rather than simply using technology to mirror traditional pedagogy (p. 209). New literacies PD confronts entrenched "first mindsets."

Cognition. The paradoxical blend of affordances and constraints inherent in 21st century ICTs means they have yet to enjoy the "transparency of function" known to overhead projectors and television sets in K-12 education (Koehler & Mishra, 2008, p. 7). The "protean" nature of digital technologies amplifies problems and issues teachers face, but they also amplify opportunities for teacher development by requiring teachers to become "life-long learners who are willing to contend with ambiguity, frustration, and change" (p. 8). Schmidt and Gurbo (2008) framed the opportunity for literacy teachers thusly:

> Literacy will constantly be redefined as new technologies emerge and as expectations change for what it means to be literate....Likewise, literacy educators will be expected to respond to these changes with a solid knowledge base about specific content, pedagogical and technological knowledge related to literacy education. (p. 63)

This is the essence of TPACK. Hughes and Scharber (2008) described new cognitions as the "tipping point": "We need to develop situations in which critical masses of teachers 'tip' over the point toward knowledgeable technology integration" (p. 101). They proposed creating "cognitive conflict" by immersing teacher-learners in readings of new literacies literature. "In this way, practicing teachers are exposed to new technologies primarily through new content perspectives that place technology inextricably within evolving English content" (p. 101) The tipping point may be conceptualized as a necessary tension that, if carefully leveraged, will produce innovation in thought and practice.

Reflection. New literacies PD, then, can lead to productive tensions, but only if participants are invited to make sense of the disequilibrium. “Teachers must begin to cognitively consider their own professional knowledge to create openings for the development of their TPACK,” Spires et al. wrote (2009, p. 7). To that end, the researchers asked their teacher-learner participants to select a visual that represented their course experience and write an analogy to explain it. Hughes and Scharber (2008) attributed pre-service teachers' difficulty in enacting TPACK-infused lessons "to a lack of meta-cognitive awareness of their nascent knowledge and its impact on lesson preparation and student learning" (p. 94). To address this issue, the authors recommended that as new teachers build their knowledge within the framework, they are guided in explicitly tracking their development "to enable them to set learning goals and/or classroom-based research goals for themselves and, in turn, make thoughtful decisions for technology integration" (p. 95). According to The New London Group (1996), situated learning as “the sole basis for pedagogy” can lead to mastery of practice and little else if not buttressed by several other components, especially the life experiences and backgrounds of the learners themselves (pp. 84-85).

Transformation. Perhaps better stated as “identity learning,” this aspect of new literacies PD is the least understood but the most important if change in practice is to be sustained (Hagood, 2003; Leu et al., 2004; New London Group, 1996; Spires et al., 2009). Leu et al. (2004) referred to the “historic change” in teacher roles as a major principle of the New Literacies perspective. Teachers must consider the distinct likelihood that they are not always the most literate person in the room and choose

instead to facilitate "complex contexts for literacy and learning rather than simply dispense literacy skills." Students whose teachers cannot manage the shift will be decidedly disadvantaged: "Because teachers become even more important to the development of literacy in a world of new literacies, greater attention will need to be placed on teacher education and professional development" (p. 1599). Identity formation in relation to new literacies teaching and learning carries a hefty implication for future research.

Implications. In my partial review of the limited research base on new literacies in ELA/literacy contexts, I drew the following implications or action steps for future planning and implementation of new literacies PD:

- Focus efforts on practicing classroom teachers, who have situated knowledge and expertise that can buttress their fledging new literacies enactments.
- Use the multiple realities perspective to ascertain teachers' knowledge, beliefs, and attitudes toward digital and Web-based ICTs, as these elements will strongly determine the success of implementation.
- Use hands-on, authentic projects in which teachers can experience dilemmatic aspects of new literacies and scaffold their experience with direct instruction and modeling.

I will expound on these findings using two new literacies studies, a "landmark" one and a very recent one.

Originally published in 2001, Karchmer's qualitative study explored the practices

and perspectives of teachers who integrated Internet content into their instruction in ways that were clearly ahead of the times. Data analysis was ongoing and consisted of the constant-comparative method and the generation of analytic memos, in which Karchmer documented themes and categories and monitored her own positionality. This method of data collection (interviews and journals) and analysis aligned with her theoretical frameworks, largely based on the concept of multiple realities. Karchmer's primary research question was, "How does the Internet influence literacy and literacy instruction?" Interestingly, the teachers' various realities and self-reported uses of the Internet often contradicted widespread predictions of "redefining literacy." Karchmer speculated that the teachers' various approaches and attitudes toward reading and writing instruction – their "multiple realities" – may have limited the "convergence" (p. 1272). This outcome points to a major implication of the study: the need for better teacher education and PD in technology. Areas for future research include resolving issues of time constraints on teachers' efforts to properly integrate Internet content and identifying the best instructional methods for teaching new literacies skills.

One lesson we can draw from Karchmer (2001) is her use of the multiple realities perspective, already explicated in a previous section of this chapter. Even before Labbo and Reinking's version of the multiple realities perspective was published, teacher educators and new literacies advocates were calling for a remapping of the conditional and procedural knowledges that teachers would need for success in 21st century classrooms. Nicaise and Barnes (1996) predicted that the role of the teacher would change significantly under the "new agenda," and teachers "will need to be trained in the

processes of mentoring, problem or task creating, and scaffolding" (p. 210). The New London Group (1996) suggested, "It may well be that we have to rethink what we are teaching, and, in particular, what new learning needs literacy pedagogy might now address" (p. 61). Later, the advent of TPACK and the learning-technology-by-design model (Mishra & Koehler, 2006) provided the practical tools for organizing and describing the teacher-as-learner's experience when taking up new literacies practices. But the experience is made more powerful when supplemented with dialogic and collegial interaction. A more recent study, published in 2011, provides a powerful case-in-point.

In what they described as "a joint technology integration venture" (p. 108), a university researcher and a fourth-grade teacher planned and implemented a research project using Web-based tools (Atkinson & Swaggerty, 2011). Teacher and researcher collaborated and reflected continuously in a highly context-sensitive enactment of technology integration, framed by the new literacies imperative. Dealing with multiple, uncontrollable obstacles and contradictions that impede access to technology prompted Atkinson and Swaggerty to write,

> Today's classroom teachers seek to help their students succeed, answer to multiple accountability factors and mandates, deal effectively with a myriad of behavior issues, and manage everyday school routines inherent in the midst of a world where what it means to be literate is changing at an exponential rate. (p. 100)

The teacher, “Maya,” traveling along an arc of development from novice to innovator to expert, earned “great satisfaction for ‘paving the way’ for future Internet research at her school” (p. 105).

School-based reform may be more likely if our attention is focused on experienced teachers like Maya, whose situated classroom knowledge serves as a springboard to innovation. As Hughes and Scharber (2008) have explained, technology learning is constrained for novice teachers when schools provide the tools but not the content-specific training. The “onus” for real classroom change rests in the hands of practicing teachers (Atkinson & Swaggerty, 2011, p. 101). Atkinson and Swaggerty characterized their classroom collaborator, Maya, as having “a keen desire to explore, question the status quo, and ensure that students were offered increasing numbers of learning opportunities in which they employed 21st century literacies” (p. 99). But a case like Maya’s is atypical because “the pool of veteran teachers who have a thirst for and/or support for technology integration is small across the nation's teacher population" (Hughes & Scharber, 2008, p. 100).

Indeed, efforts to integrate technology – much less efforts to study technology integration – may be partly stunted by practicing teachers themselves, who sometimes demonstrate fear and uncertainty in relation to the avalanche of change imposed by 21st century digital and Web-based ICTs (Atkinson & Swaggerty, 2011; Hofer & Swan, 2006; Koehler & Mishra, 2008; Murphy & Lebans, 2008; Niess, 2011). Niess (2011) invoked “the wicked problem” truism when she pondered, “The wickedness of the problem is contained in this question: How and when do teachers develop this TPACK strategic

thinking if they have not learned the content with these technologies?" (p. 308). Harris (2008), who devised a method of TPACK-related PD called "learning activity types," has written that working with in-service teachers is "more a process of persuasion than prescription" (p. 267). Classroom teaching is a balancing act, such that teachers will simply choose not to integrate emergent technologies if the incumbent challenges – the inevitable glitches, barriers to access, and lack of support – outweigh the perceived advantages. In describing teachers' negotiations of these challenges, Atkinson and Swaggerty (2011) remarked, "Some simply 'band-aid' random technology tools to existing lesson plan, while others make 'stabs in the dark' by superficially employing technology tools with little thought to how tools match the tasks at hand" (p. 100).

How, then, to "persuade"? The literature already illuminates the route to TPACK strategic thinking: authentic, hands-on problem solving with digital ICTs accompanied with explicit instruction and grounded in contemporary understandings of the shifting definition of literacy. What is less apparent in the literature, what has perhaps been less fully articulated and conveyed to the presumed audience for this research base, is just *why* teachers should embark on the journey. The missing piece of the puzzle may best be understood as a process of "identity learning" (Geijsel & Meijers, 2005).

Identity Learning

In his famous essay, "Teaching and the balancing of round stones," Duffy (1998) advocated for a model of teacher education that develops "thoughtful adaptation" over "technical compliance" (p. 778). In Duffy's approach preservice teachers develop the "mindful intervention typical of inspired teachers" by evaluating and discussing the

myriad pedagogies, strategies, and techniques presented in their methods classes vis-à-vis their own "vision statements" for teaching (pp. 779-780). Duffy's intervention for preservice literacy teachers aligns in many ways with theoretical lenses on identity developed by Gee (2000) and Geijsel and Meijers (2005).

In theory. In his broad theoretical frameworks for analyzing "identity politics" (p. 116), Gee defined identity as "the 'kind of person' one is recognized as 'being,' at a given time and place" (p. 99). Gee clarified that he is talking about a form of identity shaped by context and social interaction, not people's "core identities," which are more stable over time (p. 99). Identities are the product of social interaction and discursive practices, in which language and representational systems enable individuals to work out and make sense of various stances and moral convictions. Categories once assumed to be "natural" or "objective" are actually negotiated "interactional achievements" (p. 119), an assertion commonly made in the CHAT literature. We negotiate our identities by combining certain recognizable attributes into a capital "D" Discourse, or "way of being" (p. 110). Gee, in fact, equates Discourse with other sociocultural theories, including communities of practice (Wenger, 1999) and activity systems (Y.Engeström, 1987, 2000; Leontiev, 1981). These parallels have been drawn elsewhere in the literature on identity formation (Chandler-Olcott & Mahar, 2003; Vianna & Stetsenko, 2011).

By the same token, Geijsel and Meijers (2005) combined elements of interaction, institutional positioning, and discourse into their conceptualization of teacher identity formation, which they termed "identity learning." Identity learning is a "dynamical and cyclical process" (p. 422) that occurs when teachers' situated knowledge confronts

dilemmatic aspects of reform, in moments called “boundary experiences” (p. 424). Teachers, working in community, grow cognitively through “social construction” and “individual sense-making” (p. 420). As new knowledge becomes integrated with new perspectives, they are re-oriented from novice to expert roles. Thus, identity learning is a process that combines cognition and emotion. Innovation and reform become possible as teachers build up the stamina, confidence, and mental acuity to deal with the next inevitable phase of ambiguity and disequilibrium. Offering their model as “an additional perspective to the understanding of educational change processes,” Geijsel and Meijers claimed identity learning is the key to sustainable reform because “improvement is always about the learning of those involved” (p. 422).

It is interesting to consider how teachers’ efforts toward technology integration in K-12 contexts might map onto this process of identity learning. New literacies practices and processes are the perfect “boundary experiences” for instigating the spiral of development and helping re-orient teachers to a teacher-as-learner stance. I want to explore the developmental path from novice to expert, with "expert" defined as one able to manage sustained "engagement with the contradictions" (Roth, 2004, p. 7). Specifically, I want to articulate what the evolution from novice to expert means in relation to new literacies and to link ideas of multiple realities, resistance, and identity learning in the process. Hughes and Scharber's "tipping point factor" (2008, p. 101) comes to mind, in which teachers are goaded to action through explicit metacognitive awareness and reflection on new literacies content knowledge. In all of this, I see implications for the selection and preparation of future teachers as well as the

continuing development of in-service teachers (my focus). If teachers want to be effective in the classroom, and if they want to derive satisfaction from their work, they must be predisposed to lifelong learning and constant re-invention and adaptation.

In practice. TPACK-related PD can be viewed as a process of identity learning. Let's take a closer look at Harris' (2008) approach called "learning activity types." Her method builds on the assumption that experienced teachers generally use a template or shorthand for planning instruction: topic, curriculum standards, pacing, special resources and materials, assessment strategies, and so on. According to Harris, there are identifiable TPACK-related activity structures within every discipline, and it's just a matter of familiarizing teachers with their options and how to implement them. For some teachers, however, this poses an initial "boundary experience." Teachers must compare the potentialities of new digital tools versus nondigital tools for supporting student learning, which "encompasses new information and/or new ways of thinking about the planning/instructional design process" (p. 266).

Harris (2008) bases her work with in-service teachers on "andragogical" principles such as authentic learning, intrinsic motivation, and collaboration and, yet, has noted, "[I]n spite of a preference for autonomy, many adult learners – experienced teachers included – are accustomed to more dependent forms of learning" (p. 267). When we disrupt comfortable, "dependent" modes, we encounter fear and resistance. Harris attempts to minimize this by promoting "both autonomous and collaborative instructional decision-making while simultaneously encouraging open-minded consideration of new instructional methods, tools, and resources." She described her method as "a balance of

helpful, non-constraining structure/scaffolding for new implementation of ideas while acknowledging experienced teachers' agency and expertise in the classroom" (p. 267). This runs directly parallel to Geijsel and Meijers' (2005) guidelines for identity learning in schools, which call for

> engaged participation in the shared practices of research, reflection, dialogue and the co-construction of meaning and skill. The key to learning, from this perspective, is not adaptation but creation and the free choice of individuals to participate in a social reality called organization and thereby to learn. (p. 422)

Like Harris (2008), Geijsel and Meijers (2005) anticipated the role of emotion, saying that fear and uncertainty play a "key role" in identity learning because they are necessary conditions for "*the formation of a reflexive consciousness* [emphasis in original]" (p. 424). Facilitators should not avoid emotion but should, in fact, make room for it. In making accommodations for teachers' "agency and expertise" as well as their strong emotional output toward institutional change, both Harris (2008) and Geijsel and Meijers (2005) align with the multiple realities perspective, which permits researchers to consistently reflect on the experience, background, and beliefs of participants while framing research questions. Multiple realities enable us to ask the questions, and the CHAT framework enables us to try to answer them.

In the CHAT tradition. Change is the "core issue of activity theory," wrote Roth (2004, p. 1), who defended AT against claims that it is too static and structuralist. Roth made a case for using CHAT in identity work, claiming, "Cultural-historical activity theory embodies much needed hope. Rather than accepting circumstances as they are…,

it encourages us to view each action also as transformational – changing the life conditions and ourselves" (p. 7). CHAT and activity system analysis are a complementary methodological framework for describing and documenting the iterative process of teacher-learner identity development. In activity-theoretical studies, we trade Geijsel and Meijers' "boundary experience" for what Engeström (2000) referred to as "disturbances and contradictions," but the implications for studying new literacies teaching and learning are the same. Literacy is a historically situated, dynamic social process (Leu et al., 2004). Thus, it is a "durable object-oriented activity system" and a prime unit of analysis (Engeström, 2000, p. 964).

What does it mean to study new literacies teaching and learning as "durable object-oriented activity"? In one of the most cited papers in the field, Cole and Engeström (1993) argue a case for this sort of study, using an example not of new literacies but of elementary reading acquisition. Cole and Engeström disputed a "unified psychology" (p. 11) by showing how cognition is distributed to different "loci" of an activity system on Engeström's reconceptualized triangular diagram (See Figure 1.) Then, the authors discussed two examples of studies on distributed cognition that employ CHAT. The first study was on reading acquisition and represented a marked departure

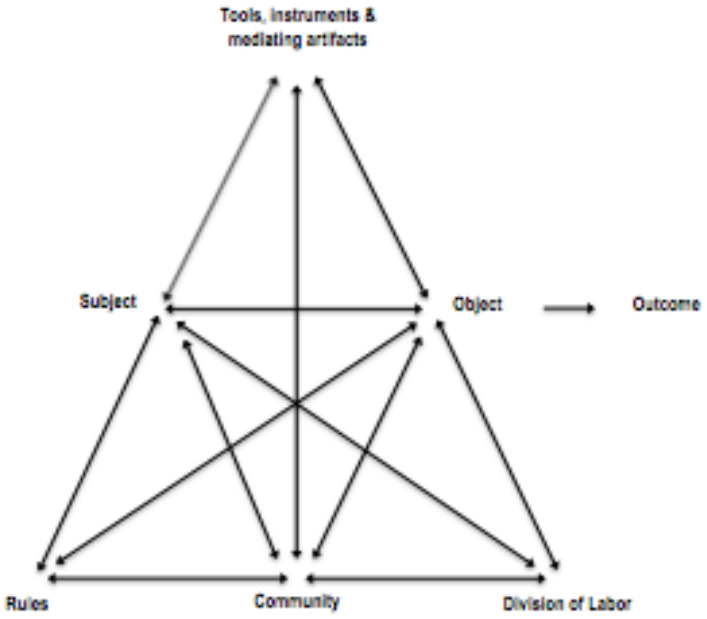


Figure 1. Engeström's classic triangular diagram

from typical studies that segment the reading process into levels, with only vague reference to the top-down processes of comprehension that "constrain the bottom-up processes to permit interpretation of the decoded texts" (pp. 22-23). Traditional studies have failed to acknowledge the inherently social quality of reading instruction, but Cole and Engeström showed that by applying CHAT, it is possible to organize the activity setting to promote reading development, not as a solitary, interior process, but as one involving multiple systems that must be coordinated into an "interpsychological" system of reading (p. 24). To achieve this coordination, the authors planned an intervention in which they modified and applied a reciprocal teaching procedure. Therefore, instability

and inner tensions within a system can be leveraged for the common good. Engeström (2000) wrote:

> The identification of contradictions in an activity system helps practitioners and administrators to focus their efforts on the root causes of problems. Such collaborative analysis and modeling is a crucial precondition for the creation of a shared vision for the expansive solution of the contradictions. (p. 966)

Engeström's triangle has evolved into a "tool designed to destroy the myth of directness in learning and teaching," (Sannino, Daniels, & Gutierrez, 2009, p. 13). Still, some elements of Engeström's triangle are under-appreciated, according to Roth (2009). Scholars focus on the structure of activity, ignoring the "agentive dimensions of activity, including identity, emotion, ethics, and morality or derivative concepts, such as motivation, identification, responsibility, and solidarity" (p. 53). Theorizing these "sensuous" aspects was central to the work of all the early Soviet psychologists (pp. 53-54). Most Western researchers, on the other hand, focus on the structural aspects of activity, but Roth referred to "emotional valence" as the "ultimate mediating moment of an activity system" (p. 65). To illustrate his point, Roth presented a case study of a fish hatchery to show how AT researchers can obtain, classify, and interpret data, all the while paying respect to "sensuous aspects." He worked for five years on an apprenticeship basis at the hatchery, where he collected data as a participant observer and engaged in daily work routines. This allowed Roth to learn the activity system in a concrete way and depict workers' emotional states as integral to their job performance.

A fish hatchery in Canada is a far cry from reading teachers interacting in an online venue to advance their understandings of literacy instruction. In fact, at the time I write this, no studies exist in which activity systems analysis was deployed for purposes of understanding teacher identity in relation to new literacies teaching and learning, an issue I discuss in more depth at the conclusion of this chapter. In preparation for writing this dissertation, I searched the major education databases and literacy journal archives for exemplar studies with similar topic, setting, participants, and audience as my own project. I found none. However, I did locate several activity theoretical studies in education from which I drew helpful theoretical, methodological, and design implications. I will summarize these in Section III.

Section III: Summary of Activity Theoretical Studies in Education

Search Methods

I searched education research databases (ERIC and Education Full Text) to zero in on studies that named CHAT or AT as a framework to investigate literacy and identity learning in contexts similar to the study at hand. I delimited the search within a five-year timeframe, using the following keywords: Cultural-Historical Activity Theory, activity theory, activity systems analysis, literacy, identity, New Literacies, and new literacies. Dozens of activity theoretical studies in education have been published within 2007-2012, with topics ranging from new literacies in a rural American Indian community (Betts, 2009), teacher perceptions of technology innovations (Karasavvidis, 2009), and identity construction through critical pedagogies in a group home for boys (Vianna & Stetsenko, 2011). Once I started reviewing the literature, I set up Google Scholar alert

queries to stay apprised of newly published scholarship relating to New Literacies and CHAT. However, to date, I have found only a handful of studies that focus on identity learning of participants in a literacy context (Chandler-Olcott & Mahar, 2003; Twiselton, 2004; Valencia, Martin, Place, & Grossman, 2009), and even then, I had to open my search to studies dating back as far as 2003. With the exception of Chandler-Olcott and Mahar (2003), who investigated adolescent girls' identity construction with digital multimedia, these studies did not deal with new literacies, focusing instead on preservice literacy teacher identity formation.

Although I did not find CHAT studies of practicing teachers and new literacies, I identified several articles in which investigators used AT to illuminate tensions and contradictions in complex learning systems. These articles helped me understand the method of activity systems analysis, if nothing else, and, in some cases, gave me insight into how theoretical frameworks may be productively woven together. As I decided which articles to read and summarize, I followed Yamagata-Lynch's (2010) criteria for selecting appropriate examples:

- provides new knowledge about how to use activity systems analysis
- presents a thorough and accurate understanding of activity theory and activity systems analysis
- provides a clear description of the data collection and analysis procedures
- reflects a thorough and accurate understanding of the theoretical framework and analysis process

What follows are summaries of three studies that demonstrate how the analytic tools associated with CHAT may be used to understand a variety of complex learning systems. After each summary, I include an explanation of how the study specifically informs my own theoretical approach and research design, which I advance in more detail in Chapter Three.

Conceptualizing Online Communities of Math and Science Teachers

Overview. Barab, Schatz, and Scheckler (2004b) described the development and implementation of a multi-year, grant-funded Inquiry Learning Forum (ILF) for secondary math and science preservice and inservice teachers in Indiana. A large segment of the ILF was online. According to the authors, case study methodologies "black-box" (p. 25) the complex dynamics of setting up and implementing educational technologies. Their intent was to describe the designers' perspective on the development of the online community and to describe the teachers' perspective on the community in practice. The researchers asked these questions: What is the perspective of a teacher who uses an online learning community? What is the experience of designing and participating in an online learning community? What are the dynamics of a social network in which teachers seek to share and improve their practices?

Methods. To answer their questions, Barab et al. (2004b) collected the following data sources: writings of design team members, observations of independent "outsiders," fieldnotes, semistructured interviews with participants and participant-researchers, transcripts of online dialogue, and other "traces" (e-mail, project notebooks, meeting notes). Using sociotechnical interaction network (STIN) theory as a frame, the designers

came to recognize ILF not as a technical structure, but as a community of users. With the entire community as a unit of analysis, Barab et al. applied Engeström's framework (See Figure 1.). Initially, a generalized activity system from the researcher-designer perspective described the making of the Web site. Later, the researchers envisioned the Web site as an activity system in which teachers were the subject. By the end of the second year of the ILF, the conceptualization had evolved once again, and design and use were seen as "transactional activities," nested in one system (p. 38).

Findings. Barab et al. theorized that user-centered communities cannot be ready-made; they must grow from within, consistent with STIN theory, which assumes that technology must not only be usable, it must support community practices. The entire community and its Web-based components were reconceptualized from the STIN perspective, in which tools, objects, outcomes, and community are defined and re-defined through interactions and transactions. For instance, participation in the ILF was shown to be affected by the attitudes and expectations of parents and students as well as in-school support. The larger collective, of which the Web-based community is but one part, is both tool and object. "Every system, including the ILF, has a history and nested actions, which when viewed from different vantage points and from different points in time, may be construed and represented differently and constitute their own activity systems" (p. 41).

Implications, comments, and reflections. This study demonstrates how AT is used to examine "rich sets of dynamics and local tensions," (p. 44), or what I would call multiple realities. By reconceptualizing the unit of analysis as a STIN or, simply put, a network of nested activities, Barab et al. provided a "useful extension of activity theory"

(p. 39). According to the authors, "As activity theory informed the dynamic activity of the creation of a STIN, so the STIN informed the dynamic nature of activity theory" (p. 45). In addition to trying to capture teacher perspectives on Web-based learning, this work resembles my project in that the authors maintained an "interventionist stance," as both researchers and intervening participants. "The interventionist stance requires being engaged in forming new cultural artifacts and forms of practice jointly with the community members at the same time we are researching their formation" (p. 31). The authors claimed to perform theory-building by putting forth a "synergistic" combination of AT and the STIN framework (p. 29). "We found it useful to conceptualize the ILF as a STIN and then use an activity theory framework to focus our analysis on particular functions of the STIN" (p. 43). I see exciting parallels between the STIN perspective and New Literacies, which also emphasize contexts and social relationships.

Connecting Learning and Identity Development Through a Transformative Activist Stance Overview. Vianna and Stetsenko (2011) contributed a theoretical paper that first outlines recent developments in the field of identity learning before turning to a closer examination of new research on critical teaching and learning and a "transformative activist stance." The authors presented a case study of a boy who constructed a new identity based on his participation in a collaborative project to improve his group home.

Vianna and Stetsenko claimed that traditional research on identity does not theorize it as having anything to do with learning, and educational research, under the influence of behaviorism and cognitive science, is generally not concerned with identity either. Theories of group/ethnic identities as well as social constructionism have

contributed to a shift in thinking about the interrelatedness of identity and learning, but these approaches are also not without their limitations. Social practice theories, including AT, afford the "most fertile foundation for integrating identity and learning....Identity is viewed not as a matter internal to individuals – something they 'have' and carry around – but rather, something that they *do* or enact in interactions with their world" (pp. 315-316). The strength of these theories is they resist dualisms of social forces versus the individual mind. Vianna and Stetsenko upheld Lave and Wenger's notion of "communities of practice" as the most evolved conceptualization of learning as "relational process" (p. 316). However, they also claimed the COP framework minimizes the value of *any* school learning (in favor of communities and apprenticeships) and does not treat the possibility of formal knowledge transmission and acquisition as a "genuine tool for identity development" (p. 317).

Vianna and Stetsenko presented an alternative view, the "transformative activist stance," which is an expansion of Vygotsky's theory and regards "high-order cultural tools" and "collaborative transformative practice" as useful for identity development, especially in adolescence. Identity development is grounded in social practices and activities. "...[T]he notion of identity in TAS posits that commitment to changing community practices and the ability to contribute to social change (if even on a small scale, and whether in dramatic or merely mundane forms), are critical and central to both identity and learning" (p. 318). With change at its core, TAS relies on teaching and learning (unlike the COP framework) because this is how individuals acquire the cultural tools for participating in social change.

Methods. As a dissertation study, the first author collaboratively implemented a three-and-a-half year "critical-theoretical program of teaching-learning" in a group home, which he later published in book form in 2009. A case study on one participant, Jay, is drawn from the larger study, with emphasis placed on Jay's "turning points at the intersection of identity and learning" (p. 322). Data sources included field notes and interviews, staff members' meeting notes, institutional records and reports, teachers' assessment data, boys' individual treatment plans, tapes of psychologist and social worker phone calls, and artifacts from the boys' participation in the collaborative learning project. The large data set was continuously triangulated and systematically analyzed for patterns and turning points along Jay's trajectory. The comprehensive analytic framework served as the basis for selection of quotes and events from the data set.

Findings. Jay acquired new knowledge and tools of understanding, and his identity in the group home changed. The more his identity changed, the more committed he became to learning. He went from having no academic ambitions to having a career ambition that resulted in him enrolling into college. On this basis, Vianna and Stetsenko argued that the opposition between transmission and transformation and between knowledge of the past and social critiques is not necessary. Theoretical knowledge and formal means of knowledge transmission, such as in schools, can be used to challenge the status quo.

Implications, comments, and reflections. Because it relies on teaching to impart theoretical concepts, the TAS stance has been critiqued as authoritarian. But, as Vianna and Stetsenko described, Vygotsky and his followers focused on the need to ground

concepts in history so as to give them relevance and meaning. Good education can do this. For instance, this reminds me of the explicit strategy instruction to aid in metacognition. It also reminds me of the new literacies study in which the authors provided readings on the New Literacies perspective as a form of consciousness-raising among participants toward creation of a "tipping point" (Hughes & Scharber, 2008). Also, identity within TAS has to do with the pursuit of "meaningful life agendas" and "meaningful life projects." I am not sure if the current study context and participants fall into this category, but the application of TAS and collaborative transformation practice as a mechanism for breaking cycles of "control, resistance, and punishment" among historically disempowered groups (e.g. public school teachers), seems like promising frame for a future study. Nonetheless, I do see connections between this study and my own, and this is one of the only practical applications of Vianna and Stetsenko's expanded vision for CHAT that I could locate.

Re/Making Identities in the Praxis of Urban Schooling

Overview. This study illustrated how participation "in the praxis of urban schooling" makes and remakes participants' identities (Roth et al., 2004, p. 50). Drawing on case study evidence, the authors conducted an activity system analysis of an urban high-school classroom to better understand identity formation of two participant-researchers, a teacher and a student. The authors contended that identity is not stable and is the outcome of participation in social activity. Every node within the activity system serves as a resource to enable and constrain the relationship between subjects and object. "Each node is understood not as a constant entity but as undergoing continuous change,

which in part is brought about in the system's response to contradictions" (p. 50). Schools play a special role in continuously altering students' and teachers' identities, but the activity theoretical research literature does not pay sufficient attention to participants' identities and subjectivities. As Roth et al. wrote, "To understand the subject realities of the participants in schooling, we need to better understand how they understand themselves" (p. 52). With that goal in mind, the authors sought answers to these questions: What is the role of the activity system as a whole in this process of producing and reproducing individual participants, and with it, the culture of which each individual is a constituent part?

Nested in a larger research project with an overarching goal of changing urban teaching and learning environments, the two-year case study occurred in an urban Philadelphia school divided into 10 small learning communities (SLCs). All of the authors of this study had some sort of instructional relationship with the Science, Education, and Technology SLC, including Cristobal, a young teacher who had recently transferred to Philadelphia from a school in Florida, and Ya-Meer, his student for both years of the study.

Methods. According to Roth et al., to do a study of identity, one must identify the activity settings where identity formation is at stake as well as the resources participants have on hand to accomplish their goals and intentions. The authors had access to videotaped lessons, analysis sessions, and debriefings as well as journal reflections, face-to-face interactions, and emails. They also used transcriptions from "cogenerative dialoguing," in which all participants discussed classroom events for the purpose of

identifying practical alternatives and changes in practice (p. 62). The data was continuously subjected to "a reflexive hermeneutic phenomenological analysis," in which each set of analyses becomes a resource in future analyses toward the development of a "locally grounded theory of praxis" that informs participants of future lines of action (p. 53). The basic unit of analysis was "mediated action" (p. 53) in the form of classes or lessons involving both Cristobal and Ya-Meer. Structural changes to Cristobal's activity system brought about by his recent change of status and change of schools shifted his identity and agency as a science teacher. Each structural change is discussed in relation to Cristobal's identity: resources, division of labor, rules, personal schema.

Findings. Findings are reported as a blend of first-person narrative, third-person narrative, and transcript excerpts. Findings illustrate how Cristobal's and Ya-meer's identities continually changed over time, sometimes through seemingly minor events and confrontations. Both participants' agency as well as the structure of the field (schemas, objects, tools) stood in transactional relation with each other. Weak cultural boundaries between fields enabled both participants to enact schemas that eventually brought coherence to the field. Theorizing the dynamic nature of students' and teachers' identities in this way makes "positive change and development plausible" (p. 62). As Roth et al. concluded, "This study shows that identity can be changed dramatically by removing contradictions from the primary activity system" (p. 67).

Implications, comments, and reflections. I recognized several connections between Roth et al. (2004), the two studies summarized previously, and my own study. First, this study exemplifies the theory-to-praxis and praxis-to-theory connection put

forth by Barab et al. (2004b) and uses cogenerative dialogues to serve this connection. The cogenerative dialogues provide the mechanism for participants to bring contradictions and conflicts "to the table" where differences in perspective can be discussed and resolved. I think this data generation method is a close cousin of interactive interviewing, which I used in my study and which I describe in more detail in Chapter Three.

A second parallel I see, with implications for my project, is that the authors depict identity development as the same sort of transactional process described by Vianna and Stetsenko (2011). After opening their case study with a compelling anecdote to illustrate the role that school plays in identity formation of teachers and students, Roth et al. wrote, "Identity, therefore, is not a stable entity that individuals take in and out of situations; rather, identity can be regarded as one of the outcomes of a person's participation in ongoing activity" (p. 50). Similarly, I am interested in applying AT to describe the teacher-learner journey along the novice-expert continuum in relation to new literacies. If the current literature base is any indication, this topic has not previously been treated in quite this way, creating an opening to which my study may make a effective contribution.

Section IV: Significance of the Study

Theoretically, this study suggests a promising marriage between the New Literacies and CHAT traditions. In preparing to write this dissertation, I located two research studies that specifically connected CHAT and new literacies (Betts, 2009; Chandler-Olcott & Mahar, 2003) and one that connected CHAT to sociotechnical interaction network (STIN) theory (Barab et al., 2004b), a frameworks born out of the

designer/technologist perspective but no less in parallel to the New Literacies perspective, with its emphasis on sociability and context. These fruitful mergers are keeping in the spirit of Stetsenko's (2005) expanded form of CHAT, a sentiment echoed by Barab et al. (2004b) who wrote in the conclusion of their study, "We believe that it is through the application of complementary theoretical perspectives, especially when their assumptions employ us to acknowledge multiple scales and foci for analyses, that theory can have the greatest practical significance" (p. 45).

From a practical standpoint, several scholars hail CHAT as a powerful tool for linking theory and practice (Barab et al., 2004a; Roth & Lee, 2007; Roth, 2004, 2009; Yamagata-Lynch, 2007, 2010). Roth and Lee (2007) wrote, "One of the most attractive features of CHAT for educators is that it lessens the theory-praxis gap due to the historical primacy of material, work-related activity over language and theory" (p. 210). The kind of "praxis-oriented research" (p. 210) strived for herein enables the investigator to break away from a 30-year tradition of IT research that has focused on tools rather than participants and contexts (Greenhow, 2009). What is achieved by descriptions of identity formation predicated upon actions and outcomes, and how does this serve the agenda of advancing new literacies in teacher education? "The study of goals, action, and concretely achieved outcomes provides us with the resources for articulating and theorizing emotions, identity, and the ethico-moral moment of human praxis," Roth explained (2009, p. 71). If we know how teachers change from novice to expert and if we can articulate that transition in meaningful and accessible ways we have a better chance of designing effective teacher education and PD. On the other hand, if we continue to

over-emphasize cognitive aspects of teacher technology knowledge without regard to teachers' motivations, interests, needs, and experience, then we will only exacerbate the century-long divide between IT research and IT practice.

Chapter Summary

In this chapter, I presented CHAT and activity systems analysis, in combination with the New Literacies and multiple realities perspectives, as a means to explore and better understand teacher-learner enactments with the new literacies. First, I defined my synergy of frameworks: the New Literacies perspective, multiple realities, and CHAT. Second, I reviewed what is currently known in the research literature about the new literacies and identity learning in relation to teacher preparation and PD. Third, I summarized how activity-theoretical studies can explore "agentive dimensions of activity," (Roth, 2009, p. 53), including identity development. In the final section of this chapter, I argued that my inquiry bridges gaps in the theoretical literature on which it is based and, at the same time, contributes to a practical knowledge base. It is on these grounds, I stake my claim that a CHAT-informed study will enable a focus on the "human side of literacy teaching and learning" (Spitler, 2011, p. 314) for better addressing new literacies integration in teacher education and PD. I outline this procedure in the next chapter.

Chapter Three: Methodology

The purpose of this study is to describe the teacher-learner experience within a blended, graduate-level Reading Education course sequence (REED 537/539). In this chapter, I describe the path I took to answer the questions generated by the research problem as outlined in Chapter One and made more distinct in Chapter Two. Briefly, the research questions are:

- What situational forces influenced the teacher-learners' experiences as members of a blended learning community?
- What were the teacher-learners' perspectives while using new literacies tools and practices within a blended learning community?
- What did the teacher-learners' articulations reveal about the role of identity during the blended learning experience?

Cultural-Historical Activity Theory (CHAT) and its analytical spawn, activity systems analysis, can be used to illuminate tensions and contradictions in complex learning systems (Cole & Engestöm, 1993; Kaptelinin & Nardi, 2006; Roth & Lee, 2007; Roth, 2004; Schul, 2010; Yamagata-Lynch, 2010). As such, to better understand the participant experience in the complex learning environment of a blended Reading Education course, I deployed an interpretive frameworks that combines CHAT with the New Literacies (Leu et al., 2004) and the multiple realities (Labbo & Reinking, 1999) perspectives within a case study approach.

This chapter begins with a description of how I applied my frameworks based on the recent contributions of theorists who are reconciling gaps and inconsistencies in the

"canonical version" of CHAT (Stetsenko, 2005, p. 71). I will also delineate the embedded philosophical assumptions of the New Literacies (Leu et al., 2004) and multiple realities (Labbo & Reinking, 1999) perspectives, which complement CHAT. (See Chapter Two, Section I, for an overview of my substantive theoretical frameworks.) In Section II of this chapter, I discuss the case study design, and in Section III, I describe data sources and methods of data collection. Section IV outlines data analysis techniques, my use of activity systems analysis, and practices for ensuring trustworthiness. Section V explicates the rationale for the representation of findings, first as a case study narrative and then as an activity systems study. In Section VI, I conclude with a summary of limitations and delimitations that circumscribe this study.

Section I: Interpretive Frameworks and Assumptions

Certain epistemic and ontological assumptions ground my notions of teaching and learning with 21st century digital technologies and, consequently, influenced the design of this study. In qualitative inquiries such as this, philosophical assumptions guide the choice of theories and frameworks, but the assumptions are transparent and must be actively written into the study, typically in the methods section (Creswell, 2013). As Creswell explains, "The form of this discussion is to convey the assumptions, to provide definitions for them, and to discuss how they are illustrated in the study" (Ch. 2, Writing Philosophical Assumptions into Qualitative Studies, para 1). To that end, I will review the nature and use of my interpretive frameworks, which combines CHAT with the New Literacies and multiple realities perspectives. Then, I will summarize the assumptions associated with my unique frameworks.

Cultural-Historical Activity Theory (CHAT)

To review, CHAT is both a theory and method originating from Soviet psychology and the work of Vygotsky (1925/1997, 1978) and his followers, namely Leontiev (1981). Disputing prevailing efforts in psychology to dichotomize subject and environment, Vygotsky put forth concepts such as mediated action, internalization, and the Zone of Proximal Development (ZPD) to support his claim that consciousness is a product of continual interaction between subject and environment. Leontiev (1981) theorized the interaction as "looplike" (p. 49) and thus reconciled dichotomous notions with his activity theory (AT). Engeström further elaborated AT when he expanded Vygotsky's subject-object-tools matrix into the triangular diagram commonly seen in contemporary CHAT studies (Kaptelinin & Nardi, 2006). (See Figure 1.) At present, one point of contention within CHAT is how to account for individual agency and subjectivity in this process of human development (Roth, 2009; Vianna & Stetsenko, 2011).

Activity theorists have raised concerns about the tendency within both Leontiev's and Engeström's work to neglect aspects of subject identity and the role of individual agency in the object-related work within activity systems (Roth, 2009; Roth et al., 2004; Stetsenko & Arievitch, 2004; Stetsenko, 2005, 2009; Vianna & Stetsenko, 2011). Stetsenko and Arievitch (2004), for instance, have proposed an expansion of CHAT to include the concept of "self as leading activity," a perspective within which "traditionally mentalist constructs such as the self appear in their practical relevance – as an important mechanism allowing people to participate in and contribute to social

collaborative production of their lives" (p. 498). Stetsenko and Arievitch describe "self" as engagement in changing the world (or, *not* changing the world by choosing *not* to engage, which Stetsenko refers to as a "contribution" to preserving the status quo). These ideas tie in with my assumptions about teacher dispositions toward technology.

For the novice activity theorist, such as myself, who wants to attend to questions of identity in the activity system, it is a challenge at times to reconcile the ideas of Stetsenko and others with the many generations of Engeström's triangular model of activity systems analysis. Is it possible to weave Stetsenko's ideas with Engeström's into one compatible vision? Stetsenko (2009) claims to expand Leontiev's conceptions of self, and she and Arievitch (2004) seem to strongly reject Engeström's approach as neglecting the role of self and identity. Yet, other theorists who have embraced Stetsenko's work, credit her with reconciling dichotomies and closing gaps in Engeström's learning theory (Edwards, 2009; R. Engeström, 2009). In other words, Engeström's and Stetsenko's versions of AT are not mutually exclusive and suggest opportunities for innovative approaches and applications of "a unified system of interactions" (R. Engeström, p. 260). According to Edwards, who has examined matters of identity from within the developmental work research paradigm, "a future vision of activities seems to indicate movement toward increased subjectivity" (p. 260). This study sought to leverage this trend toward subjectivity in the investigation of teacher-learner perspectives within a blended learning environment.

In a 2005 essay, Stetsenko described CHAT within an "emerging landscape" she called the "transactional view of human development" (p. 72). First, she summarized the

"canonical version" of CHAT and its primary internal contradiction stemming from the dichotomized principle of object-relatedness. According to Stetsenko, Leontiev introduced imbalances and gaps into CHAT by over-emphasizing social aspects in resistance to prevailing individualist conceptions of consciousness. She then argued for the pendulum to swing back a bit, toward a more comprehensive, "unified theory of human development" (p. 75). This is not presented as a rejection of Leontiev. Instead, it is a bridging of gaps in Leontiev's work, using the idea that "interdependence of material practice, human subjectivity, and intersubjectivity is possible if they are revealed to form a three-fold unified dialectical system of mutually co-determining and co-evolving facets of human life" (p. 81). This approach involves exploring the "dialectical manifold transitions" between external production of tools, social interaction, and internal subject positioning, with implications for the social sciences, including educational research. However, in the absence of a precise "how-to," the method is open to interpretation. In Chapter Two, Section III, I summarized two studies by contemporary CHAT theorists (Roth et al., 2004; Vianna & Stetsenko, 2011) who applied this unified theory to depict identity development as a transactional process with complex learning systems. Their work to resolve tensions and gaps within the CHAT tradition partly inspired the design of the present study under consideration, which is a case study of teacher-learner engagement with new literacies practices and processes.

The New Literacies and Multiple Realities Perspectives

The field of New Literacies views literacy as a social and cultural phenomenon that is continually evolving (Lankshear & Knobel, 2006, 2007; Leu et al., 2004; Leu,

O'Byrne, Zawilinski, McVerry, & Everett-Cacopardo, 2009; Leu, 2000). The New Literacies and the multiple realities are kindred frameworks that encourage practitioners and researchers to shift their focus from traditional literacy tools to the ever-expanding spectrum of practices and processes enabled by 21st century information and communication technologies (ICTs). The multiple realities perspective is a "continuum based on potential goals, motivations, or reasons for integrating (or in some cases not integrating) new digital technologies with literacy instruction" (Labbo & Reinking, 1999, p. 481). This non-discrete continuum is best viewed as "anchor points for defining and discussing" (p. 481). The multiple realities perspective guides interpretations of research and observations of practice. Thus, multiple realities help us to appropriately situate the topic of technology inside the bigger picture: technology as an extension of literacy and literacy as an extension of selfhood and identity. In this way, the multiple realities and the New Literacies are complementary lenses through which to appreciate contexts, participants, practices, and research agendas. Further, they are ontologically and epistemologically compatible with sociocultural theory, in general, and CHAT, in particular.

Guiding Assumptions

My methodological orientation is the outcome of aligning CHAT and the New Literacies and multiple realities perspectives to my own subjective assumptions. To me, CHAT implies a more hopeful view of human development than the cognitivist view. The sociocultural view suggests that human development is evolving, not predetermined (Stetsenko, 2005). (See Chapter One, Statement of Reflexivity, for a more thorough

explication of how the underlying epistemic and ontological assumptions of sociocultural theory align with my personal background, my professional experience, and my evolving understanding of the research literature.) My research agenda, therefore, is based on the following assumptions, drawn from New Literacies and multiple realities:

- Literacy involves multiple practices and processes in addition to conventional reading and writing: the new literacies.
- The definition of literacy is in constant flux, thus making the new literacies dilemmatic and demanding a critical stance.
- The role of literacy teachers is changing and assumes proficiency in using digital tools and, more importantly, a strategic learning stance toward use of the technologies in personal and professional practice.
- Every stakeholder in an educational setting has a different perspective, including the researchers studying the situation.

Further, CHAT is grounded in the fundamental belief that human development occurs within activity settings, which can be dramatically altered through planned interventions. As new perspectives, ideas, and experiences are introduced into activity settings as artifacts, they may potentially be changed into cultural tools that mediate change in practice and, in so doing, dramatically alter participants' social context and self-understandings. Because these basic assumptions of CHAT align with my own "fundamental orientation to learning and knowing" (Piantanida & Garman, 2009), I pursued a CHAT-informed research design of activity systems analysis within a case study.

Section II: Design of the Case Study

Selecting the Case

CHAT is a substantive theoretical and analytical frameworks that does not provide a clear logic of methodological design. Thus, it is not uncommon for CHAT scholars to rely on methods such as design-based research (Yamagata-Lynch, 2007), ethnography (Hedestig & Kaptelinin, 2002), or case study (Roth et al., 2004; Vianna & Stetsenko, 2011). Case study research and CHAT are compatible because "when investigators engage in data collection and analysis they need to be able to treat goal-directed actions, object-oriented activities, and activity settings as separate yet highly interrelated bounded systems" (Yamagata-Lynch, 2010). The intellectual fathers of AT (Vygotsky and Leontiev and others) focused on enclosed lab situations and experimental designs, but the bounded space of a case study allows for naturalistic inquiry while simultaneously providing rules, conditions, and much-needed focus. The researcher proceeds based on his or her conceptualizations of the activity system and maintains a consistent, critical reflexivity about the method, which is typically reported as part of the findings in the final write-up (Yamagata-Lynch, 2010).

In deciding how to define and focus my case study, I drew on recommendations from both Stake (1995) and Yin (2008). Yin defines case study as in-depth investigation of a contemporary social phenomenon in context. The boundaries between phenomenon and context are blurred; thus, the case study must be "bounded" by the researcher to a specific person, group, event, activity, place, or organization. Following this, I demarcated my case as the blended Reading Education course sequence piloted during

the Fall 2012 semester, rather than the teacher cohort that participated in the pilot. My case is of the course and not the cohort because 1) my goal is to improve future practice in blended Reading Education courses and 2) the course is bounded by the Fall 2012 semester, while the cohort existed well before that. Based on Stake's (1995) system of categorization, I determined, after some rumination, that I was conducting an instrumental, rather than intrinsic, study. In intrinsic studies, the cases are preselected; in instrumental studies the cases are selected purposefully. However, Stake warned that his categories are not always readily distinguishable, and I found this to be true when considering the case of REED 537/539. The course sequence, in fact, is intrinsic because it is unique, local, and given (Stake). Nonetheless, my *interest* is instrumental and guided by my own a priori agenda-making and desire for general understanding about teacher-learner experiences with digital and Web-based technologies.

Understanding the Data Context

The overall setting in which this study is situated is a sequence of graduate-level Reading Education courses (REED 537/539) within the reading specialist licensure program at a large, state-run university in the southeast United States. During summer 2012 I collaborated with my major professor, Dr. Frances Reid, to redesign these courses from a face-to-face to a blended format, and the purpose of this study is to describe the participant experience within this new format, which we launched in August 2012. The revised course syllabi contained new course goals and objectives regarding students' development of competencies with ICTs (blogs, wikis, course management software, online collaboration software, and video analysis tools). Through the duration of the

semester-long, two-course cycle, ICTs influenced how students participated, interacted, and represented what they had learned.

Identifying Participants

I have served as a graduate teaching assistant within the reading specialist program since August 2009 and have first-hand knowledge of the participant population, most of whom are adult/non-traditional aged students seeking reading specialist licensure in addition to initial teacher licensure and/or other advanced degrees. In the Fall 2012 semester, we served a cohort of 15 literacy teachers from Browne County, a large, rural system about one hour's driving distance northeast of the university. The geographic remoteness of this cohort and our desire to attract other distance-learners to the reading specialist program is, in fact, what precipitated the switch to blended learning.

To recruit participants for this study, I invited an independent third party to meet with the Browne County cohort and inform them of the study during a face-to-face session on Sept. 8, 2012. Each member of the participant pool was given a hard-copy consent form explaining the details of the study and providing a statement of confidentiality. (See Appendix B.) The text of the consent form clearly states that involvement in the study is not required, and I specifically instructed my third-party intermediary to emphasize that participation in the study would in no way reflect on the students' progress or success in the reading specialist program. As my third-party conducted the informed consent procedure, some participants spoke openly about their resistance not to the study per se, but to the course redesign and the blended learning format. Many of the teacher-learner participants had anticipated a face-to-face format, in

which the major instructor, Dr. Reid, would travel from school to school and perform in situ observation of the practicum work in assessing and instructing K-12 readers. Despite this initial burst of resistance, which was fully documented in an observational memo immediately following the Sept. 8 course meeting, all but one student within the 15-member cohort agreed to participate in the study. Nonetheless, a pattern of outward resistance to the introduction of some ICTs, especially the online video analysis, became apparent over the course of the semester.

Section III: Data Collection Methods

All research is about interpreting, Stake (1995) has argued, "but the function of the qualitative researcher during data gathering is clearly to maintain vigorous interpretation" (p. 9). From the outset, I assumed the stance of an "ethnographer-apprentice learning to know as others know through embodied practice" (Pink, 2009, p. 70). I commenced data collection in an effort to identify "critical activities" that I could, in turn, analyze for systemic implications, using activity systems analysis (Yamagata-Lynch, 2010, p. 6). The specific activity setting where I concentrated my data collection efforts was the online meeting space supported by Blackboard Collaborate software. My data collection methods included observations and field notes, document and artifact analysis, and interviews.

Observing and Taking Field Notes

As a graduate teaching assistant in the Fall 2012 course pilot, I was positioned as both participant and researcher. In addition to helping re-conceptualize the course syllabi as well as the sequencing and pacing of the courses, I set up and maintained the virtual

environments in which the teacher-learners and instructors worked and interacted each week. I was responsible for creating and posting technical support resources, such as helpful links, PDF documents, and interactive video tutorials. In addition I responded to emails, text messages, and occasional phone calls in which participants requested technology assistance. My role as technology troubleshooter positioned me to make weekly and ongoing observation of those aspects most closely related to the issue under investigation (Stake, 1995)

I began data collection through participant observation during Saturday morning sessions within the virtual classroom setting. Class sessions were recorded and archived as a built-in function of the online conferencing software, Blackboard Collaborate. To maintain “an emplaced engagement with the practices and identities” of the participants and to ensure “reflexivity and self consciousness” about the learning process (Pink, p. 72), I wrote thick notes and memos during and immediately following most sessions, which lasted about four hours each. I used these field notes as "permanent record" and "memory prompt" (Watt, 2007) to locate segments of the archived course recordings for later transcription purposes. Stake (1995) advised, "During observation, the qualitative case study researcher keeps a good record of events to provide a relatively incontestable description for further analysis and ultimate reporting. He or she lets the occasion tell its story…” (p. 62). My observations combined reporting and interpretation, working with "episodes of unique relationship to fashion a story or unique description of the case" (p. 63). Because the class meetings usually lasted four hours, I narrowed my observations to instances in which technology was a focus of discussion or instruction.

Collecting Documents and Course Artifacts

Document analysis is useful in case study methodology, which strives to capture without disruption the perspectives of ordinary people engaged in activity (Stake, 1995). Specific documents and artifacts that I counted as data were participant chat, texts and emails from participants, and participants' written responses to assignments and formative assessments, which were distributed via the Blackboard course management site per the requirements of the REED 537/539 syllabi. Moreover, I acquired written documentation about Browne County, such as board-adopted goals, system-wide improvement plans, and basic demographic information.

Documents serve many uses in qualitative research. For one, they can be used to contextualize data from other sources, such as interviews (Bowen, 2009). Just as Watt (2007) relied on document analysis to enrich aspects of her interview accounts, I found that I was able to contextualize aspects of my participants' interview data with documentary details obtained from the Browne County schools central administration office as well as the school district's Web site. Another use of documents and artifacts is to track development and change over time (Bowen, 2009). In the case of REED 537/539, I was able to scrutinize results of a technology pre- and post-assessment to judge how participants' technology learning priorities evolved over the Fall 2012 semester. Other course artifacts analyzed for this study included end-of-semester reflective essays and results from the online Student Assessment of Instruction System.

Conducting In-depth, Semi-unstructured Interviews

My participant observation in shared computer-supported, collaborative learning

activities helped mitigate distance and develop rapport between me and the teacher-learner participants, some of whom I interviewed via a semi-structured protocol in Spring 2013. (See Appendix C.) From a new literacies perspective, Kendall (2008) advocates use of in-depth, semi- and unstructured interviews as a means to engage with participants in dialogue, allowing the researcher to probe questions and themes slowly over time. She discussed interviews as the best method for "exploration of meaning" and participant conceptions (pp. 133-134), an opinion supported by ethnographic scholars who describe "understandings that emerge through interaction" (Ellis, Kiesinger & Tillmann-Healy, 1997, p. 121). In January 2013 I began recruitment of interview participants by sending out a blanket email invitation to all consenting members of the participant pool. Six out of 14 teacher-learners agreed to be interviewed, and these interviews took place during the spring of 2013. (See Appendix D for wording of email invitation.) Prior to the actual interview, I provided the participants with an additional consent form and statement of confidentiality. (See Appendix E.)

Interactive interviews and cogenerative dialogues. Specifically, I asked the teacher-learners to participate in a process called "interactive interviewing" (Ellis, 2003; Ellis et al., 1997). Interactive interviews challenge cultural assumptions perpetuated by the journalistic interview format (Ellis et al., 1997; Ellis, 2003; Kendall, 2008). Instead, traditional roles of interviewer and interviewee are supplanted as researcher and participant each assume overlapping roles as expert and guide. The researcher and participant each bring a story to the interaction, and as they converse, they stimulate each other's story, reflexively co-reconstructing experience through conversation "where one

person's disclosures and self-probing invite another's disclosures and self-probing" (1997, et al., p. 122). A new story – and new knowledge – evolves out of the interaction (Ellis, 2003). Roth and Lee (2007), who advocate the application of CHAT in educational research and practice, describe a process similar to interactive interviewing that they have devised for use within educational contexts. In their technique, called "co-generative dialoguing," teachers, students, and university researchers reflect on and share emerging understandings of classroom lessons and other events (p. 212). In the context of my study, the teacher-learners shared their experiences as students in the class, and I responded with my own story from the perspective of technology facilitator and troubleshooter.

Because I am interested in the new literacies as "boundary experiences" (Geijsel & Meijers, 2005, p. 424), I am committed to the idea of collaborative communication processes as a mechanism for leveraging the potential of these experiences for stimulating personal and professional growth and development. Teaching and learning with 21st century digital tools very much constitute boundary experiences, even for self-professed "expert" teachers. Roth (2004) has argued these kinds of "engagements" lead to change, but Geijsel and Meijers (2005) have advised that change is not possible without acknowledgment of the emotions and the initial resistance that inevitably arise when we ask learners to try something new and unfamiliar: "Fear and uncertainty ... should not be avoided, nor should they be brought and held under self-reflexive control as quickly as possible" (p. 424). Rather, participants must be invited into an open dialogue, such as Gee's (2000) "discursive practices" or what Coburn (2001) has called "collective

sensemaking." Therefore, in recognition of their similar underlying assumptions, I combined elements of both interactive interviews and cogenerative dialogues in my data gathering for this study. For consistency's sake, I will use the term "interactive interviews" in all future references to this process.

Aligning with Stake (1995). The basic assumptions of interactive interviews – emotions and personal meanings as legitimate topics of research, researcher self-disclosure as more than mere tactic, and fruitful interaction between the sympathies and interests of both researcher and researched – align with Stake's approach to case study. Stake variously described the role of the case researcher as teacher, advocate, evaluator, biographer, and interpreter, with the personal style of the researcher determining the emphasis on a particular role. Stake's conception of researcher as "advocate" is useful for anticipating the "double subjectivity" (Ellis et al., 1997) of interactive interviews, in which personal meanings, attitudes, identities, and relationships evolve in a reciprocal process. According to Stake (1995), researchers are supposed to demonstrate restraint, but "research is not helped by making it appear value free. It is better to give the reader a good look at the researcher" (p. 95). Drawing implications from findings is not just a means of theoretical representation but an acceptable form of advocacy.

However, Stake (1995) argued that of all the roles, interpreter is central to qualitative research and is defined by philosophical underpinnings based in relativism and constructivism. Stake's stand on constructivism is clear: "No aspects of knowledge are purely of the external world, devoid of human condition" (p. 100). The emphasis on constructivist ontology and epistemology means that most qualitative researchers are also

relativists, not in the sense that all interpretations are of equal value but in the sense that the value of interpretations vary "relative to their credibility and utility" (p. 102). Stake explained, "The principal of relativity is strong in qualitative case study. Each researcher contributes uniquely to the study of a case; each reader derives unique meanings" (p. 103). His concluding argument around the influence of relativity in case research carries strong implications for reflexivity throughout the inquiry, including during interactive interviews.

Implications. Interactive interviews suggest a number of implications for the qualitative researcher. Researcher reflexive practices such as active listening, a collaborative approach, and open dismissal of the neutral stance in favor of an empathetic stance with participants, help mitigate the challenges of double subjectivity. Moreover, self-conscious reflection through "reflective writing" (Watt, p. 83) and the deliberative stance as advocated by Piantanida and Garman (2009), which recognizes the "centrality of writing as a way of coming to know" (Ch. 9, "Experiential Text as a Content for Theorizing," para 12), help ensure quality and trustworthiness of collaborative data generation.

Section IV: Data Interpretation and Analysis

Transcribing

I have prepared transcripts for several qualitative studies prior to this one, and I have come to rely on InqScribe software as my primary transcription tool. During this study, however, I added several new steps to build analytical rigor into my transcription process. As I have done in the past, I used InqScribe to create transcripts from

Collaborate recordings and interactive/co-generative interviews. Initially, I prepared strict transcription (Hammersley, 2010) in a standardized format to "aid the handling, comparison, and sharing of language data" (Lapadat & Lindsay, 1999, p. 70). However, in my readings on case study methodology, I discovered that Stake (1995) actually dismissed transcription, saying that a "facsimile and interpretive commentary" (p. 66) are all that participants want to see. In anticipation of future "member reflections" (Tracy, 2010), I decided to follow Stake's advice by preparing narrative summaries of each interview *in addition* to transcripts. I inserted timestamps as critical reference markers within each summary before mailing the entire document to the respective participant. This allowed the participant to refer to key segments in the transcript, if she wanted to read the exact words. (The member reflection routine is discussed in more detail in the section titled "Ensuring Trustworthiness and Quality.")

Analyzing the Data

ATLAS.ti software. Transcripts and other digital artifacts were analyzed using qualitative data analysis software, specifically ATLAS.ti. ATLAS.ti was the "container" in which all ideas and materials related to the project were stored (diGrigorio & Davidson, 2008, p. 25). Konopásek (2008) referred to the "sophisticated interface" of CAQDAS tools in general and then specifically described ATLAS.ti's "visualization" capabilities, in which the researcher's "thoughts or mental operations can easily be stored, recollected, classified, linked, filtered out in great numbers...and made meaningful *in sum*" (n.p.). Projects created within ATLAS.ti are referred to as hermeneutic units (HUs). HUs consists of links that the user creates between all sorts of object nodes: primary

documents, data segments (known as “quotes”), codes, and memos. Thus, the HU is really a network, and network views are detailed perspectives on different aspects of the network. I made extensive use of ATLAS.ti’s network view and memo features to run data queries and integrate findings for this project.

Constant comparative analysis. Following Yamagata-Lynch’s (2010) suggestions, I conducted a thematic analysis of the data set to identify “trustworthy” units on which to apply activity systems analysis. The recommended mode of analysis is constant comparison, but my initial contact with the literature suggested a possible disjuncture: with constant comparative method originating in the grounded theory tradition, and with the purpose of grounded theory being a systematic progression from descriptive to theoretical, would it prove compatible with Stake's (1995) case study approach? From Stake I gathered that the researcher’s interest in the case (intrinsic versus instrumental) dictates the methods of analysis. For Stake, the case researcher must be equally inclined toward inductive analysis, which he calls "categorical aggregation," and interpretive analysis, or "direct interpretation." An intrinsic case study requires more direct interpretation, as there is little time or need to aggregate categorical data. Intrinsic case studies are more descriptive, with emphasis on particularization. In contrast, instrumental case studies are more theoretical, with emphasis on induction and generalization.

These analytical methods reside along a paradigmatic continuum with no hard-and-fast boundaries. As with every other stage of the process, reflexivity was the key. By taking up a deliberative stance (Piantanida & Garman, 2009), I established compatibility

between the constant comparative method and my chosen approach to case study. As Stake (1995) maintained, "Each researcher needs, through experience and reflection, to find the forms of analysis that work for him or her....The nature of the study, the focus of the research questions, the curiosities of the researcher pretty well determine what analytic strategies should be followed: categorical aggregation or direct interpretation" (p. 77). The type and purpose of the case, the conceptual structure of the study, and reflexive management of evolving research questions determined my place along the analytic continuum.

Upon further investigation, I decided that Charmaz's (2006) representation of constant comparative analysis was a better epistemological fit for this study than Strauss and Corbin's (1998) version. Charmaz (2006) reported that more and more qualitative researchers from various disciplines and theoretical backgrounds find grounded theory's "flexibility and legitimacy" appealing, despite its positivistic origins (p. 9). She wrote,

> Like any container into which different content can be poured, researchers can use basic grounded theory guidelines such as coding, memo-writing, and sampling for theory development, and comparative methods are, in many ways, neutral. Grounded theory guidelines describe the steps of the research process and provide a path through it. Researchers can adopt and adapt them to conduct diverse studies. How researcher use these guidelines is not neutral; nor are the assumptions they bring to their research and enact during the process....[W]e can use basic grounded

> theory guidelines with twenty-first century methodological assumptions and approaches. (p. 9)

As such, I prepared transcripts, field notes, and memos for line-by-line analysis based on Charmaz's stepwise approach of Phase 1 and Phase 2 coding. Before coding, Saldana (2013) advised that the raw texts of the study be divided into "stanzas" with horizontal lines indicating shifts in topic (p. 18). I then imported these transcripts, along with field notes, memos, and course artifacts, into ATLAS.ti for the "initial phase" of coding (Charmaz, 2006), which parallels Saldana's (2013) "First Cycle."

During Phase 1 coding, Charmaz (2006) recommends abstinence from the use of a priori codes, favoring instead language and words of action, such as gerunds. Moreover, Charmaz encourages use of in vivo codes based on participants' unique turns of phrase, insider language, and jargon. Similarly, Saldaña (2009) advocates in vivo codes "for studies that prioritize and honor the participant's voice" (p. 74). I followed this advice and found that I quickly generated more than one hundred codes in a short time. (See Appendix F: Code Map.) Thus, I found Yamagata-Lynch's (2010) advice for keeping meticulous records on the definitions of each code immensely valuable and helpful during the initial stages of writing the thick description. I used the ATLAS.ti code manager and memo-writing features for this purpose.

A second stage of "focused coding" followed (Charmaz, 2006). Charmaz explained, "Focused coding means using the most significant and/or frequent earlier codes to sift through large amounts of data. One goal is to determine the adequacy of those codes. Focused coding requires decisions about which initial codes make the most

analytic sense to categorize your data incisively and completely" (pp. 57-58). Focused coding is a recursive process with implications for member reflections in which respondents may be asked to revisit and explore implicit topics that were glossed over or unstated in the original interview.

During a final stage of coding, known as “selective coding” (Yamagata-Lynch, 2010) or “theoretical coding” (Charmaz, 2006; Saldana, 2009), I began to draw on my theoretical frameworks, including CHAT, to guide my interpretations. Selective coding is a culminating activity that systematically links all categories and subcategories of codes (Saldana, 2009). Following Yamagata-Lynch’s (2010) example, I began drafting activity systems models “by identifying the themes that fit into the subject, tool, object, rule, community, and division of labor elements related to the study during selective coding” (p. 75); although, these drafts continually evolved during the analysis, interpretation, and writing stages.

Identifying Unit(s) of Analysis and Using Activity Systems Analysis

Selecting a unit of analysis is essential to any activity theoretical study, and the process is typically informed by the set of research questions (Yamagata-Lynch, 2010). The researcher may diagram his or her initial conception of the activity system, which will invariably serve to contrast with what happens after a more thorough analysis of the data set (Barab et al., 2004a). The unit of analysis for this study was teacher-learner goal-directed action in an online video analysis portal that supplemented the virtual classroom meeting space used in REED 537/539 during the Fall 2012 semester.

Ensuring Trustworthiness and Quality

Qualitative inquiry recasts the old positivist standards of reliability and validity as issues of "trustworthiness" and "quality," which are my preferred terms for evaluating outcomes of my work. Due to the "complexity of the qualitative methodological landscape" (Tracy, 2010, p. 837), a diversity of strategies, techniques, and "mean practices" (p. 837) may be employed by qualitative researchers to achieve the end goal of quality. The confusing terminology motivated Tracy's conceptualization of eight "big-tent" criteria for excellence in qualitative research. Additional readings from Anfara, Brown, & Mangione, (2002), Creswell (2013), and Stake (1995) helped solidify my understanding. Trustworthiness is developed and sustained through the researcher's own idiosyncratic blend of practices, which cannot and should not be standardized because each methodological approach has its own conventions. Creswell (2013), who himself named eight "validation strategies," recommended researchers clearly name their strategies and cite from whence they came. Researchers are doing well to have at least three strategies integrated into their methodology (Creswell). What follows are five of Tracy's (2010) criteria by which my study might be judged, with a description of specific strategies I deployed.

Sincerity. Sincerity is best ensured through the continuing practice of reflexivity before, during, and after the inquiry. As Tracy (2010) wrote, "Sincerity means that the research is marked by honesty and transparency about the researcher’s biases, goals, and foibles as well as about how these played a role in the methods, joys, and mistakes of the research" (p. 841). At the outset, reflexivity is crucial to the researcher's process of stating

the purpose, rationale, and chosen procedure for the study, or what Piantanida and Garman (2009) refer to as the "logic-of-justification." Despite conventional thinking, this process begins with the researcher, *not* the research question. A reflexivity statement, such as I included in Chapter One, and a clear spelling out of assumptions, as seen in the present chapter, help establish "the extent to which the procedures fit with the [researcher's] knowledge-generating assumptions..." (Piantanida & Garman, 2009, Ch. 7, "Constructing a Logic-of-Justification," para 6). Kilbourn (2006) has called it "self-conscious method" (p. 530). By identifying my assumptions, worldview, and past personal and work-related experiences, I make transparent their influence on my selection of dilemmas/problems, my interpretation of their significance, my questions, and my methods.

Meaningful coherence. The logic-of-justification is also the route toward another criteria for excellence, "meaningful coherence" (Tracy, 2010). According to Tracy, "...[S]tudies that are meaningfully coherent eloquently interconnect their research design, data collection, and analysis with their theoretical framework and situational goals" (p. 848). This is the very essence of the logic-of-justification, which, by way of immersion in the dominant discourses, should provide rationale for the topic and issue of study as well as demonstrate an understanding of the conventions, variations, and "thorny epistemological and methodological issues" of the research genre (Piantanida & Garman, 2009, Ch. 11, "Preparing to Construct a Logic-of-Justification," para 5). By immersion in the literature, the qualitative researcher can avoid a common pitfall known as the "negative logic-of-justification" in which a preponderance of quantitative studies is used

to justify the qualitative one (Piantanida & Garman, 2009, Ch. 11, "Preparing to construct a logic-of-justification," para 4). On the contrary, a well-written logic-of-justification does more than that; it situates the qualitative inquiry against ongoing debates and discourses within its *own* traditions.

One step toward building a logic-of-justification (and achieving a coherent study) is to "attentively interconnect literature reviewed with research foci, methods, and findings" (Tracy, 2010, p. 848). Before I began reviewing the literature, I had long oriented to my topic of interest based on a combination of worldview and practical and professional experience dating back almost a decade. Numerous methodologists argue this point (Boote and Beile, 2005; Kilbourn, 2006; and Piantanida & Garman, 2009). As I began my literature review, I attempted to maintain a steady focus on the "pockets of discourse" where scholars make fruitful connections between theoretical perspectives (e.g. Cultural-Historical Activity Theory and the New Literacies perspective, as explained in Ch. 2) and methodological approaches (case study and constant comparative analysis, as outlined in this chapter).

The literature review is also closely bound up in the recursive process of generating research questions and may serve as the most productive route to posing those questions in the first place. As Yin (2008) has argued, "Novices may think that the purpose of a literature review is to determine the answers about what is known on a topic; in contrast, experienced investigators review previous research to develop sharper and more insightful questions about the topic" (Ch. 1, "Comparing Case Studies with Other Research Methods," para 18). Likewise, my own research questions evolved from my

initial experiences with the case and my ongoing contact with the literature base (Stake, 1995; Yin, 2008). Stake (1995) characterized this process as a give-and-take between emic and etic issues, in which the specific context and details of the case impinge on the research question. The research question evolves as the researcher must at some point connect the emic issues to the etic issues of their discipline. During the progression of research questions, case researchers should remain open to "the nuances of increasing complexity," while never losing sight of the case (p. 21). According to Stake, a lack of balance between issues and case poses a serious threat to case study work: "No longer is the work the study of the case but the study of the issue....In case study work there is abiding tension between the case and the issues" (p. 25). This tension, if left unexplored, results in incoherence.

Rigor. Rigor is defined by a sense of abundance and complexity, as in theoretical constructs, time spent in the field, data collection and analyses, participants, and contexts. All qualitative research must demonstrate rigor, but it alone cannot guarantee quality. "That being said," Tracy (2010) wrote, "rigor does increase the odds for high quality, and the methodological craft skills developed through rigorous practice transcend any single research project, providing a base of qualitative fitness that may enrich future projects" (p. 841). One "craft skill" I developed during this study (and described in detail in an earlier section of this chapter) is the application of constant comparative analysis, a technique associated with grounded theory, in which codes and categories of codes are named, developed, refined, and integrated through numerous iterative phases. By documenting each step of the constant comparison process and by graphically depicting

each phase, the researcher achieves one form of rigor (Anfara et al., 2002; Tracy, 2010). Following models provided by Anfara et al. (2002) and Yamagata-Lynch (2010), I organized my phases of coding in a table to help readers see the larger picture of my iterative process. (See Appendix F.)

Credibility. Research findings that are persuasive and plausible are said to have "credibility" (Tracy, 2010). This "big tent" criterion is closely related to rigor, as all the primary strategies for ensuring credibility – thick description, crystallization, multivocality, and member reflections – depend on a multiplicity and richness of perspectives, details, and data sources. For example,

> Crystallization encourages researchers to gather multiple types of data and employ various methods, multiple researchers, and numerous theoretical frameworks. However, it assumes that the goal of doing so is not to provide researchers with a more valid singular truth, but to open up a more complex, in-depth, but still thoroughly partial, understanding of the issue. (p. 844).

Thus, line-by-line coding, which I completed in phase one of my constant comparative analysis, may support crystallization (Charmaz, 2006). "Your study fits the empirical worlds when you have constructed codes and developed them into categories that crystallized participants' experience. It has relevance when you offer an incisive analytic framework that interprets what is happening and makes relationships between implicit processes and structures visible" (p. 54). Line-by-line (or word-by-word or segment-by-

segment) coding forces the researcher to remain close to the actions and statements of her participants as presented in the data.

In addition, the interactive/co-generative interviewing style utilized in this study adds credibility and aligns coherently with Stake's (1995) version of case study method, in which "the interview is the main road to multiple realities" (p. 64). After each interactive interview, I directly shared transcription, coding, analysis, and interpretation with participants for feedback in an alternative form of member checking that Tracy (2010) calls "member reflections." This term offers epistemological coherence within a range of paradigmatic approaches "because the labels of member checks, validation, and verification suggest a single true reality" (p. 844). This points to one of the underlying assumptions and guiding principles of my theoretical frameworks: the multiple realities perspective.

The multiple realities perspective (Labbo & Reinking, 1999) guides New Literacies researchers in monitoring and leveraging their own and their participants' subjectivities for credible research-to-practice connections. Deliberation guided by the multiple realities perspective is what led me to revisit the language of my initial dissertation proposal and revise my truth claims and research questions. Instead of *informing* my readers or helping them to *know* how teachers learn technology, I am sharing my *understanding* of how a certain group of teachers learned technology – my unique theoretic perspective. In the field of literacy studies, especially New Literacy studies, the multiple realities perspective is often referenced as a frame from which

researchers may exert their "authorial right," as Piantanida and Garman (2009) put it. Rather than chasing after grand truths, the multiple realities perspective

> allows us to seek research-to-practice connections that are specific to particular instructional realities, that is, to focus on research findings that might be applied more confidently to particular situations rather than to seek principles so general as to be relatively meaningless in any particular context. (Labbo & Reinking, 1999, p. 486)

Throughout this study, I have used the multiple realities lens to complement my substantive frameworks and to anchor and guide my observations and interpretations of technology in practice.

Resonance. Stake (1995) has written that "good research is not about good methods as much as it is about good thinking" (p. 19). That is an imperative for good writing. So, last, and most importantly, to lessen concerns about data trustworthiness, I attempted to convey my theoretic insights through “convincing interpretations” (Reinking, 2010). By following the classic writing advice, "show, don't tell,” it is my hope to live up to Anfara et al.'s (2002) standard by providing "enough clarity and detail so that someone else is able to judge the quality of the study and accept or refute the findings" (p. 33). In case study, where particularization, as opposed to generalization, is the ultimate goal of inquiry, Stake (1995) and a colleague coined the term "naturalistic generalization" for those instances when people form and apply their own ideas based on the research findings at hand. A naturalistic generalization is not formal and explicated. Every case represents an "opportunity to modify old generalizations....Naturalistic

generalizations are conclusions arrived at through personal engagement in life's affairs or by vicarious experience so well constructed that the person feels as if it happened to themselves" (p. 85). Similarly, it is my hope that readers can learn from the case herein by comparing it to their past or present experience. Resonant writing brings naturalistic generalizations forth and paves "the logical path to assertions," which typically awaits the reader at the end of the study report (p. 12).

Section V: Data Representation

At the conclusion of Chapter One, I explained my decision to split my data representation into two chapters: the Chapter Four case study and the Chapter Five activity systems analysis. This was a difficult decision that I reached after consultation with my advisors and contemplation of several other activity theoretical studies in education, which depicted various options for representing findings. In activity theoretical studies, data analysis and representation of findings is an iterative process (Yamagata-Lynch, 2010). The repetitive and overlapping phases of coding and naming themes are not easily demarcated. It was my experience that the processes of coding and naming themes helped me first to develop a descriptive narrative of participant experiences during the pilot course, or what Stake (1995) referred to as the "particular research situation's best story" (p. 121). The story of the case does not have to be long; in fact, "a short report can be more palatable, more meaningful, than a long report" (p. 124). Rather than a plot line, the case study report typically follows a sequence:

1. Entry vignette
2. Identification of issue and purpose

3. Extensive narrative description to further define case and contexts
4. Development of issues
5. Descriptive detail, documents, quotations
6. Assertions
7. Closing vignette

The sequence is not a simple "aggregation of sections but a shaping of them into a narrative that make the case comprehensible" (p. 124). I used this basic outline to compile my report on the Browne County cohort experience during the Fall 2012 pilot of REED 537/539, which is Chapter Four.

After presenting the case report to participants who volunteered to attend a group member reflection meeting, I felt confident that the narrative provided ample warrant for continued analysis from a socio-cultural perspective. So, I next examined the case study report and drafted activity systems triangle diagrams based on significant units of activity (Yamagata-Lynch, 2010). As with previous stages of analysis, this was "an iterative process that involved multiple stages of revisions rather than a one-time linear step" (p. 91). As I developed the activity systems models, I compared them to the case study report to ensure against gaps and inconsistencies in my interpretation. The results of this phase comprise Chapter Five.

Section VI: Limitations and Delimitations

Identifying Limitations

A stated goal of this study is to purposefully eschew the trend of context neutrality by focusing on a small, localized participant pool of literacy teachers. The case

study approach necessarily limits generalizability, but still serves a need within the literature base as a model of applying the AT perspective for purposes of theory building about effective settings and structures to promote new literacies teaching and learning.

Another limitation of this study is that the REED 537/539 course sequence officially ended in December 2012. Consequently, the level of access and interaction with participants (time and availability for interviews, willingness to read and respond to transcripts and analyses) was somewhat circumscribed by the fact they are all full-time classroom teachers in a rural, remote school district. Moreover, with the exception of two participants who resumed their studies in the spring 2013 semester, the other participants regarded their obligation to the reading specialist program and the university in general as officially concluded, since REED 537/539 were the final courses in the reading specialist program. Some participants chose not to check their university email accounts, necessitating my development of an email list using Browne County School email addresses.

Imposing Delimitations

In order to limit the scope of this study and reign in the potentially massive data set, I focused on segments in my field notes, Collaborate transcripts, and other course artifacts (emails, students' reflective essays, and technology pre- and post-surveys) that specifically referenced processes and practices with digital video (capturing, downloading, formatting, editing, sharing, and analyzing). Course requirements involving video had served as an ongoing source of anxiety and stress, beginning when participants ranked video as a top concern on the technology goal ranking pre-survey. The variability

of digital video (formats and system compatibility, not to mention the sheer number of devices available for video capture) lends itself to an exploration of identity along the novice-to-expert spectrum. A focus on teacher-learner processes with digital video also lends my study a sense of urgency and relevance, with digital video currently being heralded as an important new tool for closing the teacher-development gap (Gillette, 2012) Again, as I delineated in Chapter One, we find ourselves at the cross currents of the school accountability pressures and high-tech trends.

Chapter Summary

The intent of this chapter was to provide a thorough explication of the underlying logic-of-justification (Piantanida & Garman, 2009) for my chosen research genre and methods. Rather than identifying a recipe of research design, this chapter documents my process of recognizing and sorting through the "epistemological and methodological pressure points" in the literature so as to locate the best ideas to guide this study (Ch. 7, Conventions of a Genre and Logic-of-Justification, para 2). The chapter began with a description of my substantive research frameworks, which combines recent contributions of CHAT theorists with those philosophical aspects of the New Literacies and multiple realities perspectives that I find complementary to CHAT. In Section II of this chapter, I discussed the case study design, and in Section III, I described data sources and methods of data collection. Section IV outlined my data analysis techniques, use of activity systems analysis, and means for ensuring trustworthiness. Section V spelled out my two-part representation of findings. (See Chapters Four and Five.) Finally, I summarized the limitations and delimitations that circumscribed this study.

Chapter Four: Case Study

Wearing a headset with built-in mic, Dr. Frances Reid, professor of Reading Education, sat in front of a desktop webcam at her kitchen table. With virtual conferencing software running on her computer, Dr. Reid reviewed criteria for end-of-semester projects in a hybridized pilot of Reading Education (REED), "Diagnosis and Correction of Classroom Reading Problems," and its sister practicum, 539, which she taught during the Fall 2012 semester. Sixteen students – all full-time teachers – had also logged into the virtual classroom. Most of the teacher-learners lived in rural Browne County, more than 70 miles northeast of the large, public university where Dr. Reid worked, a fact that had prompted the reformatted REED 537/539 in the first place. While four course meetings were held face-to-face, almost two-thirds of REED 537/539 instruction had been delivered online on Saturdays, between 9 a.m. and 1 p.m. Student-instructor interactions, which had once occurred through seminars and in situ observations at the university's Reading Center, were now almost exclusively handled through digital technologies.

As Dr. Reid's teaching assistant (TA), I also logged into each of these online sessions from a laptop in my home office. On this particular Saturday morning, Nov. 3, 2012, the teacher-learners listened as Dr. Reid and I spoke for more than 45 minutes about a culminating activity in REED 539: a rubric-guided analysis of students' self-recorded videos of tutoring sessions with struggling readers. We displayed about a dozen presentation slides on the whiteboard of the virtual classroom. Then, Dr. Reid paused and

asked, “Are there any questions about the self-observation rubric? What are you thinking?”

The teacher-learners voiced several questions and concerns about the “Tutoring Self-Observation Instrument.” (See Appendix G.) They had received a hard-copy version of the rubric the day before on an email attachment dated Nov. 2, but many of the teachers had been videotaping tutoring sessions with struggling readers for several weeks already. They wished they had had the rubric sooner to guide both their tutoring as well as their decisions about when and what to record. One student, Grace, invoked her dual status as both teacher and learner, explaining that she would have preferred exercising professional discernment under the guidance of the rubric, as opposed to “going in blindly.” She added, “As technological as I am, there's also an equipment issue. So, I don't know, I would have liked to have had the rubric at the beginning."

After Grace spoke, several seconds of “dead air” ensued, but the participant chat window in the lower left corner of the virtual classroom interface was alive with conversation about the late-coming rubric. The teacher-learners’ stress level was palpable among members of the Browne County cohort, who, as newly anointed “Learning Leaders” in their school system, had been notified by central office administration on Oct. 22 about a county-wide professional development training they would be leading on Nov. 6. One teacher recalled, “We were overloaded and frustrated, but it had to get done…. I felt upset with central office for adding that additional load to an already overloaded ‘plate’” (Victoria, personal communication, June 20, 2013). Another Browne County teacher attributed negative feedback and resistance in REED 537/539 to “so

much stress" that was "due not just to the technology, not just due to the fact of the two courses in one semester, but because the district was laying some extra responsibilities on us…. It was a little bit of a culmination of everything…" (Shannon, interactive interview, February 6, 2013).

This case study documents the "culmination of everything" that affected implementation of the Fall 2012 course pilot of REED 537/539. The remainder of this chapter is composed of three sections. In the first section, I review the purpose and intent of this study, how this study came to be, and my precise role in it. In sections II and III, I render a case narrative of the course pilot, followed by a series of assertions formulated on the basis of a constant comparative analysis of the case data.

Section I: Case Study Background and Purpose

The graduate-level Reading Education courses in which the Browne County cohort was enrolled were the last two required courses for reading specialist certification at the university where I work with Dr. Reid. The timing of the two courses in Fall 2012, at the end of a grueling, two-year program of study, was due, in part, to a puzzle of just how to deliver the intensive, hands-on practicum component, which had always been offered through the Reading Center on the university's main campus, nearly one hour away from Browne County.

The preK-12 reading specialist licensure program is designed to enhance preservice and inservice teachers' expertise and prepare them to serve as instructional leaders in literacy. However, a lack of incentives to pursue this intensive professional development has led to a decline in enrollment of teachers from local as well as

geographically remote school districts in the eastern half of the state. With this challenge in mind, Dr. Reid aimed to integrate distance-learning components into the reading specialist program, so as to reach a broader field of licensure candidates. As an initial step toward realizing this vision, we began work in summer 2012 on redesigning REED 537 and 539, into a format that blended online and face-to-face teaching and learning.

Ultimately, we wanted to be more intentional in our use of 21st century information and communication technologies (ICTs) to extend thinking, engagement, and learning and bring collaborative dialogue to bear on the individual instructional practice of each teacher-learner participant. These "new literacies" (Cervetti et al., 2007; Kinzer, 2010; Kist, 2005; Lankshear & Knobel, 2006; Leu et al., 2004; Richardson, 2010) had always been embedded in 537 and 539, largely defining how students participated, interacted, and represented what they have learned. Even in the face-to-face course format, students wrote weekly blog reflections, built knowledge bases within wikis, and used the course management site to submit written work and to communicate with instructors. The ability of future and practicing reading educators to develop and leverage new literacies across learning situations and learning spaces was always an anticipated – albeit implicit – outcome of Dr. Reid's course designs. By making these expectations more explicit, we hoped 537 and 539 students would acquire new insights about the potential impact of 21st century ICTs on literacy teaching and learning. Thus, part of the initial intent and purpose of the REED 537/539 redesign, and the dissertation study I conceived to go with it, was to leverage the new literacies processes of reading educators for better K-12 teaching and learning.

But my research problem and statement of intent became more nuanced and complex as the course pilot was implemented in August 2012. I had been personally involved as a TA with the Browne County cohort since spring 2011 and had occasion to engage with them on a learner-to-learner basis in some courses. In Fall 2012 my job primarily involved facilitating the implementation of new technology, maintaining the 537 and 539 course Web sites, and providing whole-group and one-on-one technology support. My role during the online sessions was participant observation, engaging with individual students and the whole group on an as-needed basis usually around the topic of whatever technology was being used. Because I was already acquainted with the participants, I often became the sounding board for them and the recipient of numerous inquiries and questions about course content and procedures, in a manner that would be expected of any TA. But these exchanges also gave me insight into the pattern of resistance and uncertainty that came to characterize the semester. As such, I became interested in the role of resistance as it related to participants' developmental paths vis-a-vis the new literacies. How were participants' self-understandings as users of ICTs influenced by the online learning experience, and how was the online learning experience influenced by participants' self-understandings?

Learning about and through 21st century ICTs is inherently dilemmatic. The aim of this case study, and ultimately this dissertation, is "to elucidate the nature of the dilemma" (Piantanida & Garman, 2009, Ch. 11, "Practice-Focused Dissertations," para 3). My goal is to problematize conventional thinking around instructional technology and teacher development, which is often conceptualized in terms of "gaps"(gaps in access,

gaps in discrete skills sets, and so on). However, as these concrete and measureable gaps are closed (with more computers, more networks, more training, etc.), new (and less discernible) inequities arise. For instance, Pierson (2001) studied a sampling of teachers recommended by their school district as "exemplary technology integrators" and documented a range of classroom approaches. She partly accounted for the variance with a number of assertions about the teachers' own learning styles, beliefs, and preferences with regard to technology. Ten years later, Hutchison and Reinking (2011) surveyed literacy teachers across the country and confirmed that, while issues related to network access and technology support were largely becoming resolved, two distinct levels of use and integration persisted in schools. They referred to these levels broadly as "technological integration" and "curricular integration," with the former reflecting a lower-level, superficial stance toward technology as "add-on" (p. 314).

The predominance of mere "technological integration" across the K-12 landscape may be explained in part by the unexamined impact of disequilibrium that invariably occurs with the introduction of new literacies into complex learning systems. Engaging with the conflict and the tension can lead to learning and even momentous reform, but only if these moments, referred to as "boundary experiences" by Geijsel and Meijers (2005), are acknowledged. Teacher educators and professional developers must create platforms for dialogue about "the meaning of the boundary experience for the community of practice, as well as one's personal sense of the boundary experience" (p. 426). However, due to the agitation they cause, boundary experiences are often sidestepped,

resulting in missed opportunities along the teacher-learner's own spiral of development toward greater expertise.

Consequently, in this study I intended to probe the meaning of participants' boundary experiences within the hybridized REED 537/539 course pilot, but, in doing so, my conceptualization of "boundary experiences" was necessarily broadened as my sociocultural assumptions were brought to bear on the data set. I came to view boundary experiences as occurring both within and without the course pilot, including, but not limited to, the destabilizing effects of digital ICTs that we as course designers introduced into the immediate course setting. A range of systemic contradictions, localized tensions, and issues affected the teacher-learners, prompting me to ask these questions:

- What situational forces influenced participants' experiences as members of an online learning community?
- What were the teacher-learners' perspectives while using new literacies tools and practices within an online learning community?
- What did the teacher-learners' articulations reveal about the role of identity as an influence on their learning experiences?

To explore these questions, I first conducted an instrumental case study of the 537/539 course pilot.

Section II: The REED 537/539 Course Pilot Experience

According to Stake (1995), case research is often compared to storytelling, but there is no climax or resolution of the problem. The problem defines the story, and there are characters and conflict, but the researcher's purpose is to use the problem as a window

to look in on the complex inner workings of a system, such as the REED 537/539 blended pilot. I adapted Stake's basic outline for extensive narration and development of issues using descriptive details and quotations. I then formulated a series of assertions, which are listed in Section III.

Before Fall 2012: Teaching in Face-to-Face Format

Taken in sequence, the face-to-face versions of REED 537 and 539 each include a variety of hands-on and field-based tasks that students complete in addition to the usual academic requirements of reading and responding to chapters and journal articles and participating in whole- and small-group discussions. In 537, offered every spring semester and again in the first summer session, students read a variety of practitioner-based literature on how to observe and document children's reading performances, how to relate a child's performance to appropriate reading instruction, and how to evaluate a child's progress. Then, 537 students identify a struggling K-12 reader in the field and conduct an intense study on that reader. First, they administer a series of qualitative assessments with the case study child. After collecting, analyzing, and interpreting the assessment data, they draw implications and design an instructional intervention. Finally, they present their data, along with audio and video clips, photographic evidence, and other artifacts collected from the field, and invite their classmates and instructor to comment on their preliminary interpretations and next steps for instruction within a model of "collaborative dialogue" (McGill-Franzen, 2006, p. 267). At the end of the semester, in lieu of a final exam, 537 students submit a formal report.

In REED 539, which could be taken immediately after the spring semester during the university's May mini-session or during the July summer session, the work of 537 continues. Each student puts his or her instructional plan into action, presumably with the same participant child from 537; although, this arrangement does not always work out, forcing the 539 student to identify a new child and re-administer the battery of qualitative assessments before tutoring can begin. Again, 539 students document their fieldwork through digital video and audio recordings. They also maintain a tutoring log and write reflective journal entries. They present their in-progress tutoring efforts for collaborative feedback and then compose jargon-free reports based on their field experience, submitting copies to both the instructor and the child's family.

In the past, the 537 and 539 course objectives have posed logistical challenges for instructors, students, and the children being studied, and these challenges were only magnified when parties were geographically dispersed. The practicum, for example, entails a rigorous, daily regime of 90-minute tutoring sessions for three back-to-back weeks on the university campus. The sessions are confined to cubicles in the Reading Center so that the instructor may observe in situ. This facilitates face-to-face reflection and feedback between the 539 instructor and students but puts the onus of transportation and parking on the children and their parents/caregivers. More problematic, it removes the intervention activity from an authentic classroom context.

In addition, students' must use presentation software with embedded audio and video clips to showcase their work. This arrangement entails a number of known issues, not least of which is the infinite variety of multimedia file formats that students create.

Frequently, students experience technical difficulties that cause presentations to exceed imposed time limits and that sometimes result in students not being able to play their video clips. Further, excessive file sizes and upload times prevent students from posting and sharing to the university's course management site, which is not a video-friendly host, thus making it impossible for instructors to archive exemplary case study content for future reference.

Fall 2012 Semester: Introducing the Blended Format

Initial challenges within the university context. Of all the courses in the reading specialist program, REED 537 and 539 are the least traditional in that they are not instructor-centered lecture courses, ensuring that some aspects of instruction would prove difficult to translate online. During summer 2012, as we redesigned REED 537/539, Dr. Reid and I considered a variety of 21st century digital ICTs that would help us address these challenges as well as meet the distance-learning needs of our current and projected student enrollment. For example, we wanted to develop a vibrant, active learning community by using the course management software in a more innovative and intentional fashion. We also intended to supplement face-to-face meetings with online instruction using the university's web conferencing and collaboration platform. We especially needed a solution for observing students' practicum work, which would no longer take place in the university's Reading Center but which would take place in the 537/539 students' own institutional contexts. The solution we chose was a Web-based portal for secure video hosting and analysis called "Evirx." Rather than Dr. Reid driving to Browne County to do in-person observations with feedback, students would video

record their enactments of reading interventions, upload and post at least two videos to their Evirx accounts, edit the videos into short clips featuring one or more of three major literacy domains (reading, word study, and writing), and use an interactive rubric to analyze and reflect on the instruction demonstrated in each clip. Students would share at least 10 clips with us and would be encouraged to share clips and analysis with at least one classmate or colleague.

Initial challenges within the teacher-learners' context. As Dr. Reid and I finalized the online course design, aligned course topic schedules, and rewrote the syllabi in anticipation of a planned August 25 start date, the Browne County cohort awaited news as to when their school year would actually start. A school budget shortfall had prompted a proposed property tax increase that awaited a county commission vote, and the future of a small elementary slated for closure hung in the balance. (A proposal to raise the county wheel tax with funds going to local schools had already been rejected in a countywide referendum on August 2.) Since the commissioners' vote was scheduled for August 13, nearly one week after the official first day of school, the Browne County director of schools opted to postpone school altogether. This resulted in a significant loss of instructional time, which would be made up for later in the semester on days ordinarily reserved for holidays and breaks. The county commissioners eventually approved the tax hike, and teachers returned to work on August 14, with students following the next day.

As one of the geographically largest counties in the state, Browne County's size and remoteness prompts descriptions based in scarcity, of which the 2012-13 budget deficit is but one example. According to Dr. Cook, supervisor of Federal programs, the

system serves a high-poverty population of children and families. Low-SES numbers range from 67 percent on one campus to above 90 percent at several other campuses. Many of the county's elementary schools are designated K-8 but still possess "a small-school feel about them," even as they sit within vast attendance zones. The system is divided in directional "quads," with schools literally located in every corner of the county, making travel time and distance between campuses an issue. As Dr. Cook said, "It [Browne County] is very spread out geographically, and that has an impact on it, … the spreading, the thinness of the resources and everything" (interview, March 20, 2013).

This "spreading thin" is manifest in the system's administrative structure, too. "We all wear double hats," said Dr. Cook, who, in addition to Federal programs, also supervises preK and English as a Second Language education (interview, March 20, 2013). These structures had a direct impact on the literacy cohort, which in Fall 2012 found itself working under multiple district-level supervisors. The cohort was funded with Title I money, meaning Dr. Cook shared a supervisory role over the cohort along with another supervisor over curriculum. The cohort itself was not immune to the "double hat" phenomenon. Due to a slow process of redirecting Title I money away from technology to literacy, some members of the cohort found themselves juggling responsibilities as full-time classroom teachers in addition to duties as building-level reading specialists. Moreover, at the start of the 2012-13 school year, these teachers learned they would become "Learning Leaders," adding yet another hat. Owing to their new status as countywide professional developers, the cohort began reporting to yet another district-level supervisor, this one over professional development.

First weeks. In keeping with the blended format of the course, we intended to begin with two Saturday face-to-face sessions, starting August 25. On August 17 we distributed aligned course schedules for 537 and 539 by email. However, the Browne County administration immediately alerted Dr. Reid to a conflict that forced revision of the course schedules and hinted at future conflicts and contradictions to come. We could not begin class on August 25 due to an already scheduled "Learning Leaders" training on August 24 and 25. On behalf of the cohort, the Browne County director of schools suggested we hold a double face-to-face session on Sept. 1, and we complied, effectively delaying the launch of the pilot a full week and a half after the official start of the university semester.

Fresh off their intensive two-day Learning Leaders training, the Browne County cohort (and one additional teacher-learner from another local school district) assembled on Sept. 1 for the first of what would be four face-to-face REED 537/539 course meetings. For the first several minutes of this class, held at the university, we discussed course logistics, including technology, and within an hour and a half of class starting, anxiety levels ran high. Members of the cohort aired a number of new and known issues: they had been told at one time that they would not have to attend classes on Saturdays, they were not sure about access to and/or use of digital audio and recording devices as required by the 537 and 539 syllabi, and the university library's digital archives and scholarly databases were inaccessible on Browne County school computers due to either the Internet filter or problems with bandwidth. I assisted the teacher-learners with a variety of technology-related tasks: helping them register their devices and log into the

university's network; modeling how to use a handheld, digital recorder as well as free, Web-based apps for audio recording; and performing quick demos of both the course management software and the virtual conferencing platform. We also announced an optional, live demo for the virtual classroom on the evening of Sept. 13. Dr. Reid emphasized, "It's all new to us, we are all learning," prompting one Browne County teacher to suggest, "We need a covenant. You be understanding of us, and we will be understanding of you."

The next Saturday morning, the class met in the Browne County central office board room. I facilitated the session because Dr. Reid was out of the state. I forgot the adaptor for connecting my laptop to the projector, and the entire building lacked wireless connectivity for the first two-thirds of class. Other than that, the session went well overall. I devoted the bulk of class to debriefing the teacher-learners on their first practice administration of the Qualitative Reading Inventory and discussing how to complete close readings on exemplar texts per the Common Core State Standards (CCSS).

During the last hour of the session, I had invited an impartial third-party representative to visit the teacher-learners and conduct the informed consent procedure that would enable this study to move forward. In doing so, I inadvertently opened a new space for an airing of grievances that had grown in number and intensity since the week before. Perhaps in Dr. Reid's absence and perhaps with our first online session just one week away, some teacher-learners openly expressed resistance to the blended learning format. Some claimed they had been told that Dr. Reid would travel to Browne County to

teach classes, observe the literacy teachers in person, and give feedback in real time. Several other inter-related concerns were shared:

- Some teacher-learners repeated their objection to Saturday classes. They had been told at the outset of enrollment in the program that classes would *not* be held on Saturdays. An optional format was suggested, in which REED 537/539 could meet on weeknights, either online or face-to-face in Browne County, as had been done with other REED courses in previous semesters.
- Moreover, cohort members, who had been working for nearly two years to earn the title of reading specialist, had recently been designated "Learning Leaders" by the Browne County administration and would be required to attend mandatory Learning Leader trainings on specific Saturdays throughout the semester (such was the case on August 25). In their new capacity as Learning Leaders, the teachers would be planning and facilitating county-wide professional development and documenting these additional hours of work, in addition to performing regular building-level and classroom duties.
- The Learning Leaders initiative was but one of several strategies for meeting Browne County board-adopted goals for literacy achievement. The system had also expended federal Race to the Top funds to offset tuition costs for the reading specialist cohort and, in turn, expected these teachers to collaborate with school principals on efforts to raise literacy scores, a fact publically stated by the Browne County director of schools in a published media account of the state's 2012 "report card" on public schools. Because REED 537/539 directly related to the

practical work of certified reading specialists, cohort members felt their efforts should focus on mastering the course content, *not* technology. The teacher-learners felt anxious about learning to use the virtual conferencing software and the Evirx video analysis portal in addition to the numerous assessments and interventions for struggling readers as required by the course syllabi.

- Internet connectivity is sporadic in Browne County, both within school buildings and home residences. Some teacher-learners feared penalties for missing class in the event of an Internet outage or network malfunction.
- Several students in the cohort were awaiting feedback from another university professor on literature reviews they had written over the summer. Until they received feedback, they could not move forward with their action research projects, which had to be completed by December 2012 in addition to REED 537/539 requirements. Time was a factor.

After the Sept. 8 class, I imparted these concerns to Dr. Reid, and, in the week that followed, a flurry of emails erupted between her and the Browne County central office administration. Dr. Reid suggested that dissatisfied teacher-learners could drop the course and complete their certification requirements at a later date, but this was not an option because all Browne County contracts and budgets were consistent with a December 2012 program completion date. It was agreed that a high level of stress was at the root of the teacher-learners' dissatisfaction and frustration, and two immediate compromises were deployed. First, we switched the Oct. 6 online class to a face-to-face session at the university. Second, a county-level supervisor agreed to open the Browne

County central office board room on Saturday mornings so that teacher-learners who did not have viable Internet access at home or who did not feel comfortable using virtual conferencing software alone could meet in a common space and support each other.

First online session. The first of seven online sessions took place on Sept. 15. Class started at 9 a.m. and continued well after 1 p.m. Dr. Reid and I experienced very few technical problems as far as people being seen and heard, but we encountered two big obstacles within the virtual classroom that would prove insurmountable. We encountered our first obstacle in the days leading up to Sept. 15 as we came to terms with the fact that virtual conferencing software would not permit sharing of multimedia content (e.g. the case studies of struggling readers with video clips) unless the content was hosted on a server (e.g. YouTube). Our plans to present, record, and archive case study presentations with embedded video clips could not be realized through the virtual conferencing platform. A second major difficulty we experienced during the Sept. 15 class was adding whiteboard content using the tool palette, mainly the "text box" and "simple text" tools. The whiteboard, which functioned like a virtual flip chart, was essential for taking notes during small group discussions, which we held almost every Saturday. Therefore, I modeled how to add text to the whiteboard, and we provided several opportunities for students to practice with the text tools. I also located resources and documentation on the whiteboard and made them available to the class. But proper use of the tools eluded some teacher-learners for the duration of the semester.

The Sept. 15 session also gave us our first glimpse into the tensions involved in using digital ICTs to perform a cognitively challenging activity, in our case, close

readings of challenging texts. This was a completely new course requirement that Dr. Reid had conceived in anticipation of the newly adopted CCSS. On top of never before assigning this task and having no real models or previous experience to draw on, we had to figure out a way to digitize it. Dr. Reid realized this was going to be more difficult than anticipated, writing in a Sept. 6 email, "I guess I didn't think about the tech requirements to actually do it as I designed it. Got carried away in the anything is possible technology moment …!" The activity required the teacher-learner to select a grade-level text, assume the perspective of a struggling reader, and annotate the text in a manner called "reading to think" (Calkins, Ehrenworth, & Lehman, 2012, p. 101), a challenging enough assignment in face-to-face mode. Working in virtual mode added another challenge: using a digital text or choosing one of innumerable ways to digitize a conventional text so the work could be shared online. On Sept. 8 I tried to anticipate the potential challenges, mentioning (but not teaching or modeling) ways to turn text into a digital image, yet even technologically adept students did not employ these methods. Several students cut and paste their text from an online resource or just typed it on the virtual whiteboard, but these methods could not preserve marginal notes and annotations and exacerbated frustrations with the difficult-to-master whiteboard. On the day of the Sept. 15 class, one student said, "Why don't we just take a screenshot of our text?" It was a great idea, and we asked her to model her process for the others.

Some participants recalled episodes such as this as illustrating how disproportionate amounts of time were devoted to solving technology glitches at the expense of crucial instruction. The technology component hindered the intellectual

activity of analyzing a literacy text and brainstorming an instructional intervention around that text. A teacher-learner named Elizabeth explained: "…[O]ur priority was not learning technology. As Learning Leaders, our priority was to focus on the content so we could disperse it to the rest of the county because that is what we were told to do" (interactive interview, January 12, 2013). Another student wrote anonymously on her pre-survey of course technology learning goals: *I want to know how to make online learning as effective as face-to-face learning because I feel that it is not! There are questions/discussions that need to happen in person rather than be* lost *through the Internet.*

Mid-semester. The REED 537/539 pilot course was not only blended in terms of modalities (online and face-to-face instruction); it was blended in terms of time, with two courses being taught concurrently rather than in sequence. This had never been done before, but had to be done in Fall 2012 to accommodate the Browne County cohort's projected December 2012 graduation date. The plan was for students to spend the first half of the semester familiarizing themselves with various informal, qualitative assessments and completing the bulk of practitioner-centered reading assignments. They would also identify a case study participant and acquire parental consent to work one-on-one with the child. The second half of the semester would be devoted to the practicum: interpreting assessment data, planning an intervention, logging at least 15 tutoring hours, and recording at least two videos for purposes of self-analysis and reflection.

"Piggybacking" the courses, as Dr. Reid put it, presented new opportunities and new challenges, which became markedly apparent by mid-semester. On the one hand,

teacher-learners could begin implementing reading intervention strategies with their case study participants more quickly, with no lag time between data gathering and instructional planning. The assessment-instruction data loop would be more authentic and viable. On the other hand, compacting the courses into one semester gave the teacher-learners less time overall to synthesize course readings, practice the range of new assessment tools and techniques, and troubleshoot and problem-solve around new technology, notably the Evirx system. During our Nov. 3 online session, with the Thanksgiving holiday and end-of-semester crunch looming on the horizon and some teacher-learners still waiting to present preliminary assessment data, Dr. Reid explained, "…[I]t's a little awkward the way it worked out. But we finished everything in 537, and we are moving into 539. So, basically what's left to do is the actual tutoring itself." With the addition of the new, self-observation and analysis requirement involving Evirx, the practicum proved for some teacher-learners to be equally intense as – or, perhaps, more intense than – before. A teacher-learner named Ann said,

> … I was starting to get *really* down during the end of that tutoring because it was, it was just *every day* trying to get those hours, you know? Because when you combined those two classes, of doing the assessment and then the tutoring, it just, it, it got to be a really long process.

As the primary facilitator of technology during the pilot, I was also beginning to feel "really down." By mid-October I was confronting my own unwillingness to "engage with the contradictions" (Roth, 2004), as we experienced various glitches during several of our planned-for technology events. Working on the condensed timeline of

“piggybacking,” for instance, required us to meet on the Saturday of Fall Break, when the university performed routine maintenance on the server that hosted our web conferencing software. The university sent out an alternate link to bypass this problem, but some teacher-learners panicked and assumed we would not or could not have class. Although the link worked for several teacher-learners, it did not work for others, and I spent nearly 30 minutes of class time solving the issue so that all students could log into the session. This cut into a planned demonstration of the Evirx Web site. Prior to class, I had tested the functionality of the Evirx Web site using the content sharing tools of the web conferencing platform. Evirx functioned sluggishly. I resorted to showing a few slides with bullet-point tips, hoping the students would access ancillary PDF resources posted on the course Web site. Moreover, when it came time for the teacher-learners to present their wiki projects using the "Web Tour" feature, the system generated a “proxy error” message. We switched to a different content sharing tool called "App Share,” and the wiki presentations were somewhat improved, except multimedia content within some of the wikis would not play. At the conclusion of the Oct. 20 session and after all the teacher-learners had logged out of the system, Dr. Reid commented, “These classes are real fat-burners, aren’t they?”

Throughout all of these technology foibles, I noticed one bright spot, from an instructional standpoint. The chat panel was remarkably useful as a forum in which the teacher-learners could vent their frustrations, seek help, and provide help to others. As Grace would later say, “People said things in the chat that they would not say into their mics” (member reflections, July 2, 2013). Monitoring the chat and the "backchannel"

conversations alerted me to questions or confusions about the course and/or the technology. I directed Dr. Reid's attention to specific questions and dealt with other questions on the side, within the chat panel itself. The teacher-learners also helped each other in chat by sharing ideas, giving advice, and buoying each other's spirits with encouraging comments and positive feedback. This might have seemed disruptive in a regular classroom environment: people whispering or having side conversations that are distracting to the instructor and other students. But it worked seamlessly in the virtual classroom.

Final weeks. The last month of REED 537/539 was packed with culminating activities and due dates. On the first Saturday of November, the final group of teacher-learners were slated to present preliminary data on struggling readers they had tested in the field using the qualitative reading assessments they had learned about during the first half of the semester. Being last to present assessment data meant these teacher-learners had had more time to practice the assessments and interpret the outcomes, but they would have far less time to engage in the hands-on components of 539: designing, implementing, and documenting a tutoring intervention based on feedback from their colleagues and Dr. Reid. The in-progress tutoring presentations, which were to include a detailed account of reading intervention efforts with digital video clips as evidence, were scheduled to be presented in just two weeks, on Nov. 17. Although the teacher-learners had until Dec. 8 to complete and submit all other coursework (a jargon-free case study report for parents/caregivers, a reflective essay on their own learning, 10 analyzed Evirx

clips, and a post-survey on technology), stress levels ran high during both of the November online sessions.

Anxiety brought on by the self-observation requirement within the Evirx platform came to a head in the Nov. 10 class meeting. The teacher-learners openly expressed their frustration with Evirx – its unforgiving tendency toward incorrect logins, its varying rates of time for video uploads (minutes for some, overnight for others), and its multi-stepped and sometimes illogical user interface. Moreover, they felt blindsided by the late-arriving "Tutoring Self-Observation Instrument" and newly added guidelines for clips: four clips on reading instruction, four clips on word study, and two on writing instruction. The teacher-learners feared a negative impact on their course grade because they were running out of time to complete the Evirx requirements, and they sought clarification about where to focus their efforts: should they worry about uploading videos that demonstrate high-quality reading instruction, or should they concentrate on the quality of their analysis and reflection, regardless of how good or bad their instruction? For example, Shannon had amassed hours of raw video but had not watched or uploaded any of it. She asked,

> …[I]s it that I need to just upload one and just kind of look at it? I mean, at this point in time, I don't really have time to pick and choose videos because I don't have time to sit and look at all of them right now.

Dr. Reid advised the teacher-learners to refer to the contents of their tutoring logs when selecting videos most appropriate for self-observation. She attempted to allay fears about course grades, saying that what was most important was conducting the tutoring,

recording it, and watching it. Evirx was simply a "vehicle for us to be able to interact with you around it." The discussion concluded with Dr. Reid saying, "There's no point in the videoing if nobody is going to watch their videos, OK? The whole thing, the whole point is observing yourself. It's self-analysis, not perfect videos or perfect video clips." The teacher-learners were then held accountable for analyzing and sharing at least one clip in Evirx before the final, face-to-face course meeting on Nov. 17.

In the end, only half of the teacher-learners completed the assignment of 10 clips; fewer completed the rubric as well. Different issues affected the teacher-learners' experience of analysis of self-recorded video. For some, the process of capturing digital video in the classroom was problematic in itself. Others did not encounter problems until it came time to upload content to the Evirx system. Still others were hindered by the embedded self-observation rubric and compared the rubric to a checklist, such as that used to evaluate teachers in the classroom. These teacher-learners reported that viewing the raw video of themselves on their personal computer desktops was a sufficient act of analysis in itself, and subsequent clipping of the video was akin to a "performance" according to what was valued on the rubric.

In one case, a teacher-learner named Victoria faced a perfect storm of issues that restricted her ability to reflect on self-recorded video. First, Victoria relied on her cell phone to capture video but quickly exceeded the limitations of her monthly data plan. Then, she discovered that what video she was able to record could not be downloaded onto her school computer because it lacked an essential port. Consequently, Victoria had to carry out all video transfer on her home computer, and this process took hours. She

surmised that if she could have used her school computer to upload to Evirx, it would have taken much less time because of the school's faster network connection. In the end, Victoria gave up trying to record her tutoring sessions in their entirety and commenced to "catching" shorter, faster-uploading clips of content she hoped would fulfill the rubric standards. Victoria said her process did not feel "authentic":

> I just took short clip, after short clip, after short clip, after short clip, and had those saved to my computer and was just trying to pick and choose what I could put up. And, you know, you don't always – it's, it's hard to find all those aspects within a short [video clip]. (interactive interview, February 22, 2013)

Looking back, Victoria agreed that the analysis of self-recorded video was a valuable professional development exercise but would have worked better in a world without the time barriers imposed by the Evirx system. She said, "…[I]t would be better if you could just set up a camera somewhere in your room and video the whole thing, and then you could go back and pick pieces that you thought were really good that you wanted to show teachers" (interactive interview, February 22, 2013). Several of Victoria's colleagues echoed this sentiment.

After Fall 2012: Adjusting the Blended Format

Eight teacher-learners volunteered to participate in interactive interviews with me in Spring 2013, after the pilot. One recommendation recurs across the interview data: keep REED 537 and REED 539 separate. Five of these teacher-learners repeated this recommendation during a member reflection meeting held in Browne County on July 2.

The teacher-learners expressed universal agreement when Grace asserted that, if the courses had to be blended in one semester, they should at least be kept "more separate….[T]hey [537/539] can bleed, they can cross at different points, but the lines need to be more clearly drawn. Get as much done in September as possible, so you can get the tutoring hours in" (member reflections, July 2, 2013).

For the foreseeable future, the REED 537/539 format will remain blended in terms of both time and modality, and as a new cohort from a rural, remote county southeast of the university enrolled in the reading specialist program, Dr. Reid converted a second course to online (REED 529, "Emergent Literacy"). Improvements based on the pilot participants' feedback and Dr. Reid's and my own reflections were implemented, including:

- More clearly defined boundaries between the content of 537 and 539. Each will continue to have its own course Web site, but the 539 Web site will not go live until halfway through the semester to avoid confusion.
- An earlier introduction to the processes of digital video. Students record a short introduction video of their case study children and practice editing, uploading, and sharing that video before tackling the "deep thinking" of video analysis and reflection on practice.
- A simplification of the "Tutoring Self-Observation Instrument," breaking it down into three rubrics, one for each major literacy domain, rather than one, large rubric. In addition, the three shorter rubrics will be posted at the start of the semester, making expectations for teacher-learners more transparent.

- Consideration of optional platforms for video hosting and sharing, such as YouTube, which offers private, free, and subscription-based "channels." During member reflections, Elizabeth also offered Skype as an option for observing and giving feedback in real-time.

During the interactive interviews, the teachers not only discussed how they would change REED 537/539; they also discussed how the pilot changed them. Shannon described it as a "reckoning" for herself:

> …[W]e can't continue to sit back and say, "Oh, I don't do that. I don't know how to do that," because we need to, because it's where the kids are going. We're being accused of not having these kids ready for college or career. And it's true, especially in the technology area because they're not getting exposed to how these things can work and help them. (interactive interview, February 6, 2013)

Similarly alluding to external accountability pressures and reform mandates, Elizabeth compared implementing classroom technology to implementing the Language Arts curriculum and made an interesting observation about the successful performance of both processes:

> And the thing is too, and what I'm hearing in this conversation and what I have thought about before, is that it's just like me being a teacher in my classroom. The kids come to me with all kinds of different tools, … [C]ertain people know a lot about this and not so much about that. And they [the school administration and the state] are trying to get me as the

> teacher to allow that to happen, and I've got to teach in multiple ways and allow them to do all this stuff. And we have a standard that we are trying to meet, but there are so many avenues to get there! You know what I'm saying? And … [T]hen you as the teacher almost have to be an expert in all of it. Or, maybe not, but be allowed to let go of the reins a little bit and say, "Ok, if you can do it this way, do it that way." But then, to help them when they need help with a certain aspect maybe I don't know, what I'll do is say, "Well, I don't know about that, but maybe you can find someone who does. I can teach you how to do it this way…." (interactive interview, January 12, 2013)

Insights such as these illuminate the developmental path between a new literacies novice and a new literacies expert. Recognizing and talking about shifts in perspectives on new literacies may have more long-term impact on deeply rooted patterns of resistance than myriad other efforts to tinker with the nuts-and-bolts of online instruction. In the next section, I will portray the results of the analysis I undertook to better understand participants' stances toward technology as they were expressed during and after the pilot.

Section III: Key Issues, Developments, and Assertions

By process of constant comparative analysis of the case study data (field notes, course artifacts, and interactive interview transcripts), I explored participants' views, perspectives, and tacit meanings and assumptions (Charmaz, 2006). Through this interpretive analysis, I arrived at a "particularization" (Stake, 1995, p. 8) of perceived

issues within the unique case of the REED 537/539 Fall 2012 course pilot. My refined understanding of the pilot led me to formulate a series of assertions:

- **Inherently unstable and unpredictable new literacies tools affected the teacher-learners' ability to complete certain tasks and course requirements.** This was never more apparent than with analysis of self-recorded video for purposes of improving reading instruction. Because the video analysis platform in which these processes were conducted was not user-friendly and because there was no clear accountability for using it, some teacher-learners postponed or neglected video analysis altogether. Elizabeth said, "I would watch it [her video] kind of, but I wasn't really, I mean, I was analyzing it, but I was also thinking, 'Well, that [the analysis, self-reflection] really happens when I figure out Evirx'" (interactive interview, January 12, 2013). For some students, such as Nicky, video recording was problematic enough. Nicky struggled with a variety of devices and set ups to capture video and said that by the time she logged into Evirx, "I just uploaded whatever I could! [laughs] And if it was good or bad, I could not care less because I was like, 'I'm done with this!'" (interactive interview, January 22, 2013). Similarly, Grace, who used an old analog camera and then converted to digital format, said, "…[G]etting the video prepared to put it online was the problem for me. And it was a little, it was just a little, it was time-consuming. It was really hard time wise, and all of this while teaching, and lesson planning, and trying to read the required articles…" (interactive interview, March 20, 2013).

- **The teacher-learners performed multiple job-related roles (graduate student, classroom teacher, reading specialist, and Learning Leader), which affected their disposition toward the course and the course requirements.** The crush of responsibilities during their last semester of graduate-level study prompted feelings of struggle and defeat. As Elizabeth remarked, "…I felt like I was about to drown" (interactive interview, January 12, 2013). The participants also confronted the false dichotomy of teacher versus student roles by having to be "like our students," and this created a sense of unease. As Victoria expressed, "…[Q]uite often sometimes we are like our students in the way that we're, we, we're kind of scared to do something new unless we are forced to attempt to try. And so I think for most of us I think that's what we stepped into, was something new, and so then being placed in the student role we had to figure out how to make that work as we went along" (interactive interview, February 22, 2013).
- **The new mode of blended learning resulted in changes not only to course format, but course content, objectives, assessment, and feedback, and the changes generated confusion and misunderstandings.** For example, out of necessity, self-observation replaced in situ observation by instructors, and self-analysis largely took the place of instructor feedback during tutoring sessions. However, the teacher-learners oriented to the self-observation rubric as a tool for providing "evidence" and producing "good video." The rubric did not guide their *reflections* on teaching so much as it guided their *selections* of video evidence, revealing that several teacher-learners misunderstood the purpose of the video

analysis. Moreover, the teacher-learners felt that course expectations changed midstream. Victoria said she and her colleagues were confused by changes in expectations: "...[I]t was like from one Saturday to the next Saturday, something might change, and then something else was due or something was added. And I think that we really struggled with that because it was just like more and more." This, coupled with the demands of being a Learning Leader, made the Fall 2012 semester extremely "tough" (interactive interview, February 22, 2013). In sum, the course, by virtue of being a pilot, never aligned with students' expectations. Referring to the blended format, Ann said, "…[I]f you guys had come to us just a few times to see us do the tutoring, to watch us do the one-on-one or whatever, it just, that might have made things a little bit easy, and had that automatic feedback, you know?" (interactive interview, Jan. 29, 2013).

- **The teacher-learners relied on a diverse array of technology tools in their home contexts, and, in some cases, did not have access to tools that performed at levels necessary for success in the blended learning community.** Again, the video requirements of the pilot brought this contradiction to bear on the teachers, as evidenced by Grace's use of analog recorder and Victoria and Nicky's use of their personal cell phone cameras, which proved less than ideal. Ann contrasted the reality of technology implementation in Browne County to the technology requirements of REED 537/539 when she said, "It's just hard for us to relate when we're not there, when we don't have that technology aspect of it yet" (interactive interview, January 29, 2013).

Each of these assertions relates a tension within the course pilot connected to broad, contextual contradictions and provides warrant for a sociocultural analysis, which I present in Chapter Five. As a family of theories, the sociocultural tradition and its newest member, Cultural-Historical Activity Theory (CHAT), provide analytical tools to ameliorate some of the most persistent shortcomings in educational research, such as ignoring complexity of context and failing to acknowledge participant beliefs and emotions (Lee, 2011). Specifically, I applied CHAT and its analytic method, activity systems analysis, as an interpretive lens to my data set. I will present an activity systems analysis of course activity as idealized by the instructors and contrast this with the participants' personal activity settings, in which they appropriated new knowledge, skills, and resources via their own efforts to negotiate tensions (Rogoff, 1995).

Chapter Summary

This chapter presented a narrative description that defined the case and the contexts of the Fall 2012 REED 537/539 course pilot. I attempted to show how the underlying issue and purpose of my study evolved from a general examination of teacher engagement with new literacies to one focused on identity and resistance. The bulk of this chapter, Section II, illustrated how contradictions besetting K-12 education in general, and Browne County schools in particular, converged with dilemmatic aspects of digital technologies to create tensions within the REED 537/539 course experience. In Section III, I outlined key developments and issues related to these tensions. In the next chapter, I take up these tensions with greater thoroughness, applying activity systems analysis to explore interrelated, developmental changes across different planes of

experience (Rogoff, 1995), and I will argue these changes were mutually constituted at the individual, institutional, and societal levels (Roth, 2004; Roth & Lee, 2007).

Chapter Five: Activity Systems Analysis

As demonstrated in Chapter Four, teacher-learners enrolled in the course pilot of REED 537/539 struggled with new aspects of the redesign and especially the tasks of self-directed capture and analysis of digital video. When viewed from a sociocultural perspective, events from the Fall 2012 semester align with a conceptualization of learning as necessarily participatory, dynamic, non-linear, and disjointed. Further, a recent trend toward an interventionist stance in sociocultural inquiry (Barab, Evans, & Baek, 2004a; Lee, 2011; Roth & Lee, 2007; Yamagata-Lynch & Haudenschild, 2009) suggests that by exposing and mending "unnecessary dichotomies" and "artificial rifts" in education "a richer, non-reductionist, and more humane approach towards educational practice and research will ensue" (Lee, 2011, pp. 403–404). As the newest addition to the sociocultural family of theories, Cultural-Historical Activity Theory (CHAT) provides both an overarching theoretical perspective and concrete analytical method (activity theory) for understanding learning activities as they are situated in complex, interactive systems (Barab, Barnett, Yamagata-Lynch, Squire, & Keating, 2002; Barab et al., 2004a; Lee, 2011).

A central concept of the activity-theoretical approach – highly significant to this present chapter – is that of contradictions, which may be linked to issues perceived as problematic by the participants. Engeström (2000) explained, "Actions of questioning and analysis are aimed at finding and defining problems and contradictions behind them" (p. 968). Further, as Barab et al. (2004a) have pointed out, problems and contradictions are necessary aspects of teaching and learning and should be viewed as "indications of

both discordance and, more positively, potential opportunities for intervention and improvement. Paradoxically, contradictions should not be mistaken as *dysfunctions*, but as *functions* [emphasis in original] of a growing and expanding activity system" (p. 208). So, while CHAT once fulfilled a purely descriptive function in research, it has evolved as a tool for improving instructional design and practice.

In this chapter, I describe my process of activity-theoretical analysis, in which I approached REED 537/539 as a "historically evolving collective activity system, seen in its network relations to other activity systems" (Engeström, 2000, p. 963). Using the tools of activity systems analysis, including Engeström's (1987) inner contradictions and Rogoff's (1995) planes of analysis, I examined significant actions from the Fall 2012 course experience in hopes of illuminating participants' iterative process of professional identity development in the context of new literacies teaching and learning. In the next section, I briefly review the tools and heuristics I utilized for the sociocultural analysis. In Section II: Activity Systems, I present my initial, idealized conceptions of the relevant activity systems: the Browne County school district, the university course, and the video analysis portal. In Section III: Inner Contradictions, I illustrate the tensions that arose from the inner contradictions of shared activity between Browne County and the university course pilot. In Section IV: Teacher Actions, I profile three teacher-learners' personal planes of activity to show how the inner contradictions were made manifest in their experiences with digital video analysis.

Section I: Review of Analytical Tools, Terms, and Definitions

Terms and Definitions

Out of respect for the relative newness of activity theory in Western educational research (Barab et al., 2004a; Y. Engeström, 2000; Lee, 2011; Roth & Lee, 2007), I elaborate on the component parts of the activity triangle, a schematic that I have briefly introduced in earlier chapters. Readers may recognize some of these terms from Chapter One, but the definitions bear repeating in the context of this chapter along with additional terms that expressly pertain to the analysis reported herein.

action – a conscious, goal-directed process performed by the subject-participant on the basis of knowledge and skill. Actions and operations comprise the hierarchical "macrostructure" of human activity, as proposed by Leontiev (1981).

activity – recurring work within a group or community that is culturally and historically situated and is inextricably bound to motive

community – the overall social organization in which the subject-participant's activity occurs. Community may exist on multiple planes, large (e.g. institutional) and small (e.g. a course or a class).

contradiction – a fundamental concept of activity theory. A "contradiction" is "a fact of life," something that exists in the environment that subject-participants cannot control. Contradictions are inherently systemic and pre-existing. Contradictions bring "tensions" to activity.

division of labor – the organization and assigning of tasks related to the goal. Simply, "Who does what?"

object – the purpose or goal-directed motive or problem upon which the subject-participant organizes and applies action and effort. The **outcome** is the result (intended or unintended) of the effort exerted on the object/motive (Barab et al., 2004a).

operations – basic, automatic processes. Sometimes actions become routinized with practice and turn into operations (Kaptelinin & Nardi, 2006).

rules – norms, conventions, expectations, and rituals that are shared and understood in the subject-participant's community

subject – the participant or participants. The subject acts on and transforms the object to produce an outcome, even as all the other components in the system "act" on the subject. In educational activity systems, the "mutual transformation of subject and object" equates to a learning outcome (Lee, 2011, p. 407). In this study, wherever possible, I prefer to use the terms "teacher-learner" or "participant," and these should be understood to mean "subject."

tension – closely connected to the concept of "contradictions" in activity theory. A "tension" is created by systemic contradictions. Participants perceive tensions while they are engaged in activity. Tensions are local and specific to an activity, or they may be introduced into an activity setting. For example, establishing a deadline (or any rule, norm, or expectation) can

bring tension to an activity. “Tensions can affect the subject’s ability to attain the object by taking a role as an obstacle, making it difficult for the subject to attain the object, or by taking a role as enabling influence for the subject to attain the object” (Yamagata-Lynch, 2010, p. 2).

tool –any instrument or artifact. The subject-participant in an activity system uses a "cultural-historically constructed *tool* (material or psychological)" to achieve an object (Barab et al., 2004a, p. 203). Tools may be technology hardware and software, but they also may be processes, learning tasks, and language and sign systems, as per Vygotsky's original vision.

Activity Systems Analysis

CHAT excels in interpretive, small-scale, teacher-oriented studies of educational change (Lee, 2011; Roth & Lee, 2007) and is increasingly being applied in “nested” contexts across “different time and space scales” (Barab et al., 2004a, p. 206). Activity systems are bounded contexts in which the object-oriented activities and goal-directed actions of individuals and communities take place (Yamagata-Lynch, 2010). The blended REED 537/539 course pilot was an example of “durable object-oriented activity” (Engeström, 2000, p. 964), and, as such, was a prime unit of analysis, by activity theory standards.

Activity systems analysis provides only a “loose heuristic” and “no generally accepted methodology” (Barab et al., 2004a, p. 208). Thus, my process of analysis was based on an amalgam of steps borrowed from other researchers (Barab et al., 2004a; Lee,

2011; Yamagata-Lynch, 2010; Yamagata-Lynch & Haudenschild, 2009; Yamagata-Lynch, 2003):

- First, I unpacked the many "configurations of the object" (Lee, 2011, p. 414) by engaging in "boundary-crossing" (p. 408) with participants through interactive interviews and "member reflections" (Tracy, 2010). I specifically attended to participants' descriptions of what they perceived as barriers and obstacles within the blended learning community.
- Next, I wrote the story of the "'hows' and 'whys' of subjects' transformations of objects" (Lee, 2011, p. 407). This first level of analysis resulted in the case study narrative, which situated the story of the course pilot within specific cultural and historical contexts.
- In the second stage of analysis (the actual activity analysis), I selected a unit of analysis, an activity and object, which represent a dialectic "so fundamental that neither exists without the other" (Lee, 2011, p. 407).
- I re-examined the data set for evidence constituting the component parts of the activity system. At this point, I came to recognize the activity as having manifold objects, some of them shared between systems. This resulted in me drafting multiple triangle models of activity systems.
- Finally, using Engeström's (1987) model of inner contradictions, I analyzed the tensions as they were made apparent within the course activity setting and deliberated on ways to leverage these tensions for change in future course activity.

Engeström's Inner Contradictions

Engeström led a period of theoretical innovation, in which CHAT left the laboratory setting and moved into the field of applied research for purposes of identifying practical solutions and reforms in a variety of settings. In Engeström's version of CHAT, researchers often assume a participatory and interventionist role and apply analysis methods to "understand the interactions among joint activities and their outcomes to resolve tensions that are brought upon by the joint activities" (Yamagata-Lynch & Haudenschild, 2009, p. 509). Among Engeström's (1987) many contributions to activity theory is the idea of joint activities, which give rise to inner contradictions, the chief source of dynamics and development in human activity.

According to Engeström, a fundamental contradiction in all human activity systems arises out of the division of labor: "The basic internal contradiction of human activity is its *dual existence* as the total societal production *and* [emphasis in original] as one specific production among many" (p. 98). As Yamagata-Lynch and Haudenschild (2009) demonstrated in their study of teacher professional development (PD) initiated by universities and school districts, inner contradictions can be used to analyze interactions, outcomes, and tensions brought about by joint activities. Inevitably, participants in joint activities will encounter "more than one value system attached to an element within an activity that brings about conflict" (p. 509). This is an example of a primary contradiction, the first in four levels of inner contradictions, which can be summarized as follows:

1. **Primary contradictions** are caused by duality, the root contradictions of all

human activity. These contradictions reside *within* each component of the activity system.

2. **Secondary contradictions** occur *between* component parts when participants must assimilate new aspects of activity into their daily routines.
3. **Tertiary contradictions** stem from the presence of multiple objects. This level of contradiction occurs when cultural representatives (e.g. university instructors or PD facilitators) introduce a new activity into a system causing conflict *between* a pre-existing object-motive and a new object-motive.
4. **Quaternary contradictions** occur *between* neighboring activity systems.

Rogoff's Planes of Analysis

In addition to portraying the recurring activity of the blended learning community, I used Rogoff's (1995) concept of the personal plane of analysis to understand specific teacher-learners' experiences resulting from dual membership in parallel activity settings: the course pilot and their own school system, Browne County Schools. Rogoff proposed a sociocultural approach to human development based on personal, interpersonal, and community processes, which she called "participatory appropriation," "guided participation," and "apprenticeship," in turn. "These are inseparable, mutually constituting planes comprising activities that can become the focus of analysis at different times, but with the others necessarily remaining in the background of the analysis" (p. 139). Simply, the planes afford "different grains of focus with the whole sociocultural activity" (p. 141), and distinguishing them serves to focus the researcher's inquiry and subsequent discussion.

Compartmentalizing human activity for purposes of analysis may seem in opposition to the sociocultural tradition. In recognition of that potential critique, Rogoff advised that a failure to appreciate the individual, the community, and society as "mutually defined and interdependent" risks a superficial application of theory (pp. 140-141). Roth (2004) issued a similar warning about grafting "dialectical theory onto a fundamentally dualistic epistemology" (p. 7). Nonetheless, Rogoff (1995) argued that "the parts making up a whole activity or event can be considered separately as foreground without losing track of their inherent interdependence in the whole" (p. 140).

Appropriation, the process under consideration here, describes the individual's experience of participation in an activity and how that experience prepared the individual for future participation. The emphasis is on a process of "becoming," not "acquisition" (Rogoff, 1995, p. 142). "By engaging in an activity, participating in its meaning, people necessarily make ongoing contributions (whether in concrete actions or in stretching to understand the actions and ideas of others). Hence, participation is itself the process of appropriation" (pp. 150-151). "Appropriation" may be understood as a contribution of an action or a new idea. This aligns with Engeström's (2000) assertion about "innovative action" and other "developmental possibilities" produced by activity (p. 966).

Appropriation is not to be confused with internalization, where something external becomes internal, i.e. "knowledge." Rogoff declared these as totally different theoretical views. The activity itself is the outcome in the sense of gaining "facility." The process – and participation in it – is the knowledge. The "substance of cognitive development," then, is interdependence, active participation, communication, and shared

decision-making. This stands in stark contrast with the common usage of internalization, as in, acquisition of "static entities," such as knowledge and skills. "Instead of studying individuals' possession or acquisition of a capacity or a bit of knowledge, the focus is on the active changes involved in an unfolding event or activity in which people participate," (p. 151). Appropriation *is* the transformation, not a prerequisite for it.

Section II: Activity Settings

This study was not intended to be about Browne County or even about the Browne County cohort. This study was about the Fall 2012 course pilot, in which the cohort just happened to be enrolled. During the case study portion of this inquiry, I delimited the case to the course and not the cohort, but I quickly discovered the two were inseparable. Because the sociocultural framework that informs this study gives primacy to social interactions and cultural artifacts, “the process of human development becomes inextricably linked with participation in culture and history rather than being dictated by biology" (Lee, 2011, p. 403). The process of human development is not dictated solely by biology, nor is it dictated solely by social structures designed to promote it. Sociocultural theory dissolves dichotomies originating in Western philosophy – cognition/identity, person/group, classroom/world. At the same time, this reconceptualization of knowledge poses a new challenge: “What is the ontological unit of analysis for characterizing activity?” (Barab et al., 2004a, p. 199). Inescapably, contexts of study are nested, interconnected, disordered. As Grossman, Smagorinsky, and Valencia (1999) wrote, "Settings can, then, have temporal, conceptual, and physical boundaries. They are rarely discrete, however, typically overlapping in some way with other settings in dynamic

ways" (p. 11). Researchers and educators, who wish to translate theory into practice, need a heuristic or schematic to visualize these dynamic settings.

Through activity systems analysis, I identified three overlapping activity systems, shown in Figure 2. Over time, the teacher-learners simultaneously maintained “sustained relationships” with other community members as they participated in goal-directed activity initiated by both their school system and the university. "These relationships are mediated by tools and artifacts for which participants develop over time a general agreement over purposes and meaning. Without widespread agreement on the motive and mediational means, a setting could not exist” (Grossman et al., 1999, p. 7). In the next part of this section, I will briefly define an idealized version of each setting, its goals, motives, tools, social practices, and value systems.

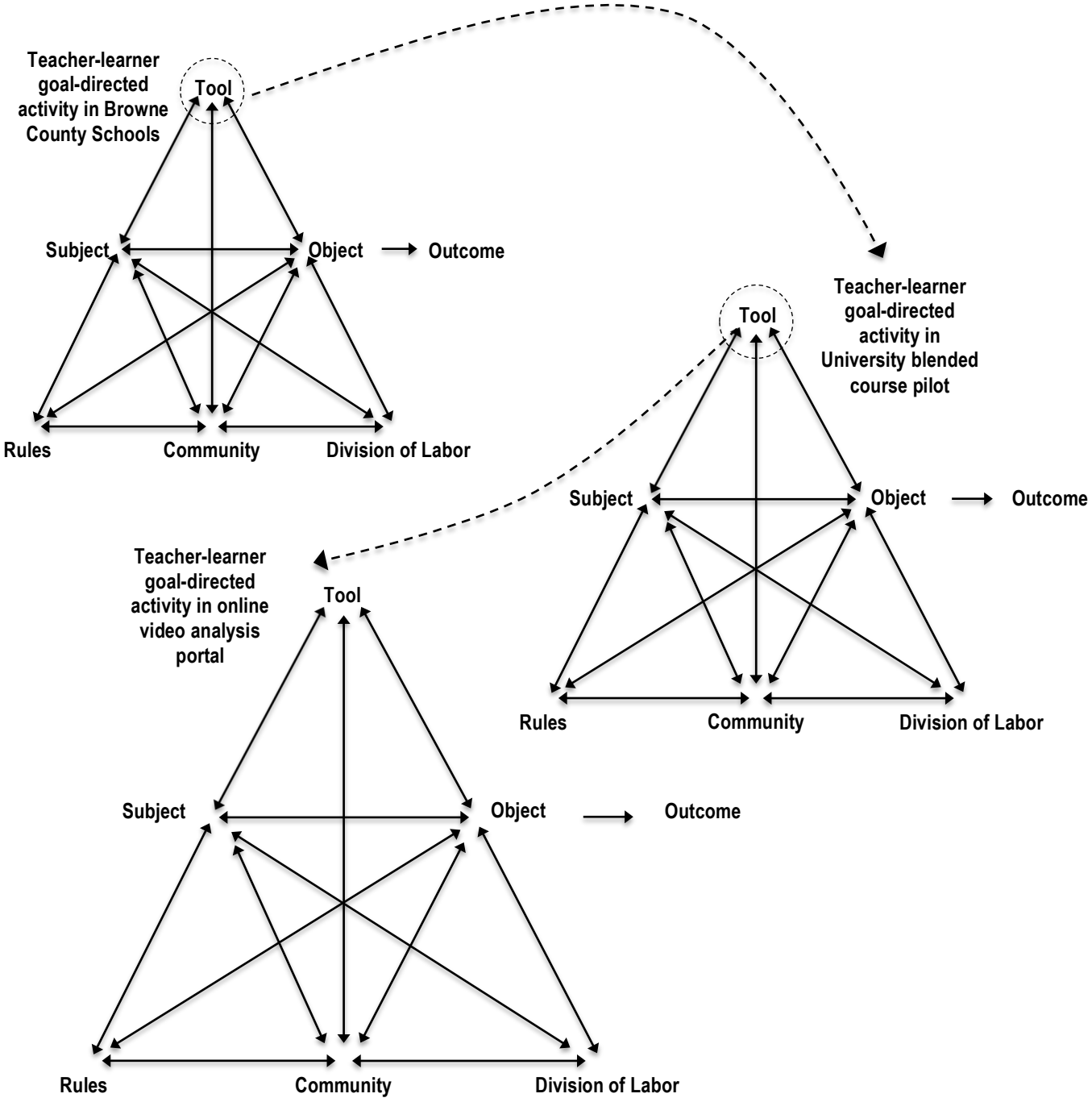


Figure 2. Teacher-learners' nested activity systems

Teacher-Learner Goal-Directed Activity in the School District

In Figure 3 the teacher-learner-as-subject participates as a member of the Browne County school system. Depending on the division of labor at the teacher-learner's specific campus, she may be a full-time reading specialist or a classroom-based reading specialist, in which traditional classroom teaching duties are combined with building-level reading specialist duties. Either way, the basic object of activity is continual improvement of literacy teaching and learning. However, by virtue of her dual membership in the university reading specialist cohort, the teacher-learner is, by default, a designated "Learning Leader," meaning her activity is directed at multiple objects above and beyond attending to the daily, instructional needs of struggling readers. Other objects of activity include: modeling teaching practices, leading PD, and serving as her school's resident literacy expert. Her required membership on the school's data committee, which analyzes standardized test scores to determine reading interventions for individuals and subgroups, carries an implicit object to improve test scores. During the 2012 school year, however, this object was made explicit through very public pronouncements about Browne County's new system-wide "Learning Leaders" initiative, for which each member of the literacy cohort was involuntarily conscripted. These objects lead to the following outcomes, intended and unintended: new knowledge and confidence in literacy instructional practice, reading specialist certification, and stress and frustration.

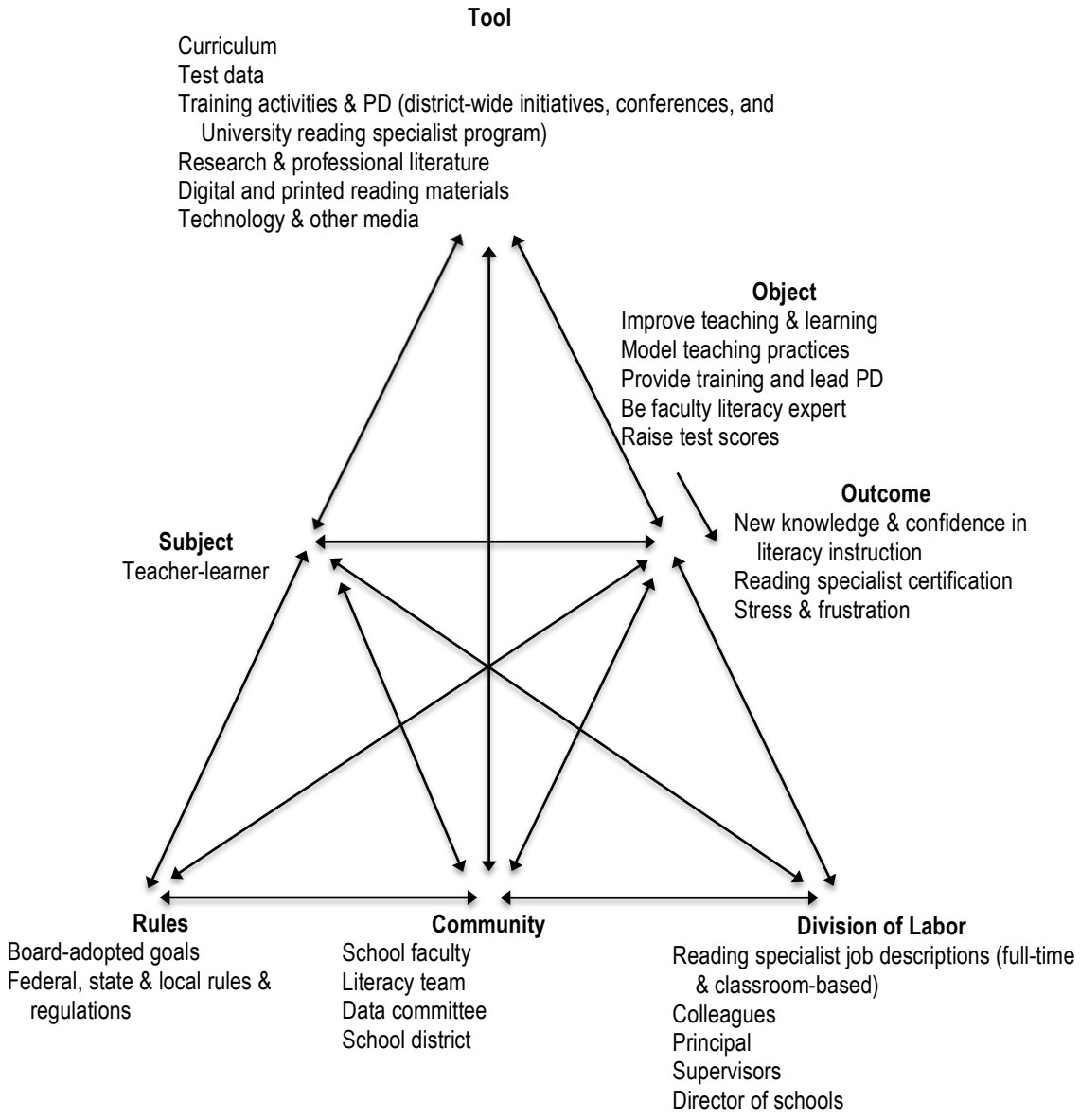


Figure 3. Teacher-learner goal-directed activity in school system

To accomplish the objects, the teacher-learner uses curricular tools and artifacts along with test score data, PD and training activities, the professional literature associated with her university coursework, and other technology and media. The rules that guide her activity consist of school board-adopted goals and directives in combination with federal and state mandates and regulations. She is in relationship with various communities within and without her immediate school context, including the literacy team, data committee, and the Browne County school district at large. The division of labor occurs between the teacher-learner, her colleagues, her principal, her supervisors, and the Browne County director of schools, with the teacher-learner's responsibilities delineated by job descriptions drawn up specifically for classroom-based and full-time reading specialists.

Teacher-Learner Goal-Directed Activity in the University Course Pilot

Figure 4 represents the teacher-learner-as-subject in the course pilot setting, where activity is initiated by cultural representatives of the university, namely the instructor. Two course syllabi, one for REED 537 and one for REED 539, articulate the object, tools, rules, and division of labor for the course pilot, and these were defined and refined verbally in social interaction between Dr. Reid, the instructor, and the students over the duration of the Fall 2012 semester. The object of the course pilot, first and foremost, is to learn how to integrate results from qualitative, classroom-based

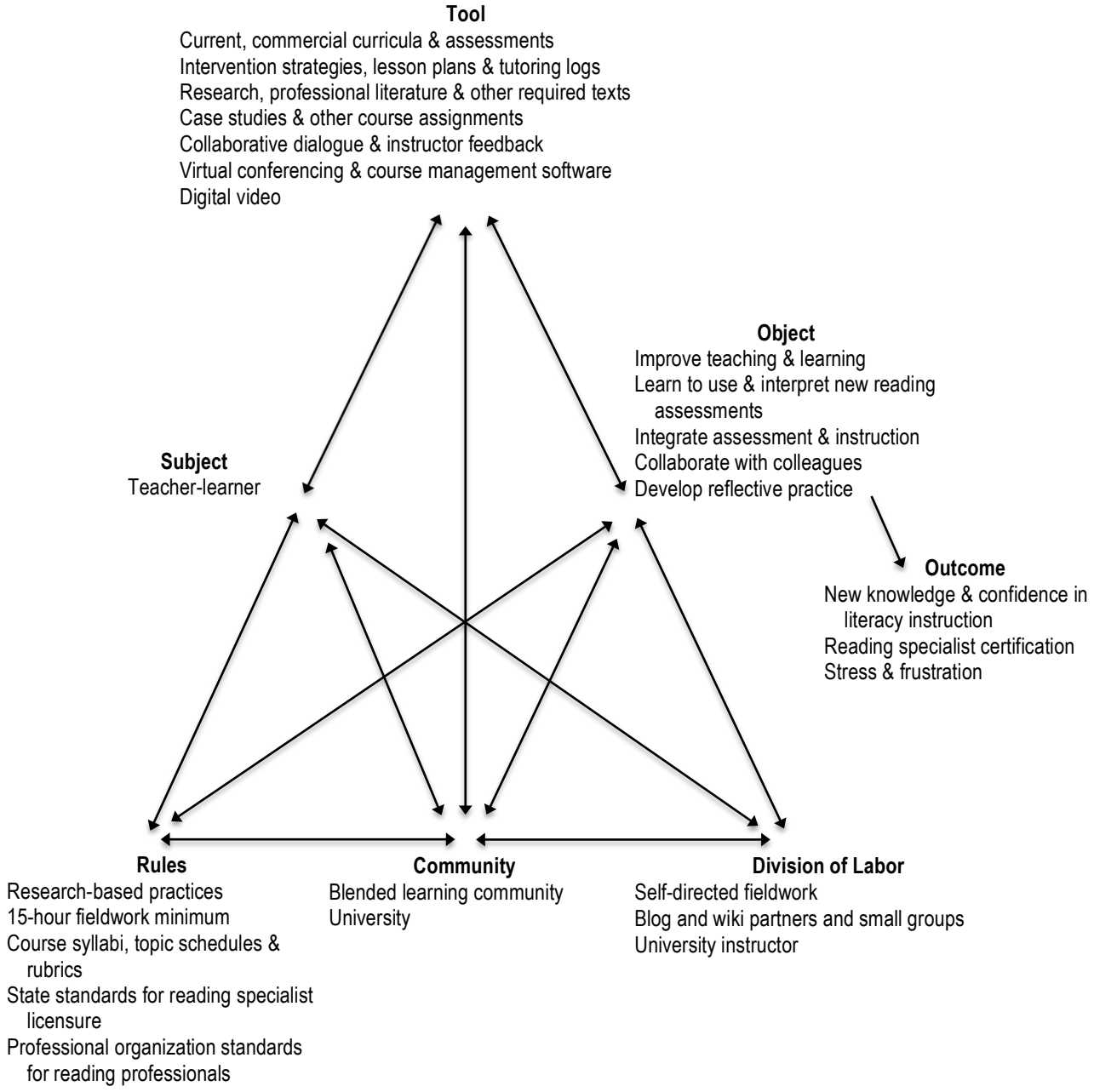


Figure 4. Teacher-learner goal-directed activity in university course pilot

assessments with instructional strategies for the continual improvement of literacy teaching and learning. A secondary object of activity is assimilation of collegial dialogue and reflective practice for successful performance of future reading specialist duties. The hoped-for outcome of this effort is new knowledge and confidence in literacy instructional practice and reading specialist certification. An unintended outcome is attendant feelings of stress and frustration.

In the course pilot, the teacher-learner utilizes practical and conceptual tools ranging from current, commercial reading curricula to pedagogical practices that are widely accepted and agreed-upon in the field of Reading Education. Use of these tools is supported by readings from required texts, various tasks and heuristics, and collaborative dialogue and instructor feedback delivered through a host of digital tools (course management software, virtual conferencing software, and video). The rules that guide the teacher-learner's activity consist of research-based practices in Reading Education, state and national standards, and specific guidelines and expectations made clear on the REED 537/539 syllabi, topic schedules, and rubrics. As a student enrolled in the university, she is a member within the broader institutional community as well as the blended learning community that is the course pilot. The division of labor occurs between the teacher-learner, her instructor, her blog partner on the course Web site, and other small groups set up for discussion and collaborative projects. However, most of the teacher-learner's work in the course pilot is self-directed in nature.

Teacher-Learner Joint Activity Systems

Figure 5 gives a picture of the two key, overlapping settings that emphasize different values and orientations for the teacher-learners: Browne County and the university course pilot. Object 1 from Figure 3 and Object 2 from Figure 4 intersect to reveal a shared object to improve literacy teaching and learning. Working within conjoined activity systems, the teacher-learner faces two somewhat divergent routes to the shared object. The value system of Browne County schools positions the teacher-learner as a leader and expert in her field; conversely, the value system of the course pilot positions her as a learner and reflective practitioner working in collaboration with colleagues.

In a 2009 study of school-university partnerships, Yamagata-Lynch and Haudenschild found that joint PD activity resulted in miscommunication and misperception of the shared object. Through activity systems analysis, the researchers illustrated that "a joint activity does not guarantee that the efforts for meeting the shared object are organized and coordinated" (p. 512). Teacher PD was systematically affected by inner contradictions radiating from the primary contradiction of all human activity – its duality. Put another way, human activity is always a process of dialectical relations between mutually exclusive parts.

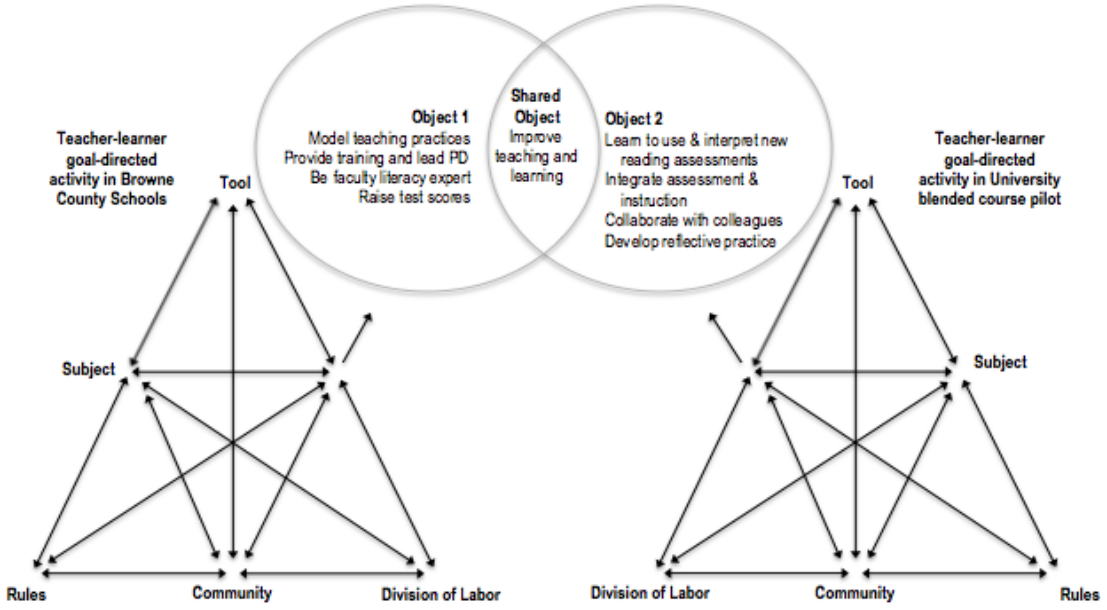


Figure 5. Teacher-learners' joint activities

Roth and Lee (2007) elucidated the concept of dialectics by way of a thread metaphor, in which a single strand is actually composed of interwoven fibers that cannot be seen without magnification:

> Without these strands, there is no thread, which thus presupposes the strands it is composed of. At the same time, the strands are what and where they are only because they are part of a thread; they assume a higher order structure that they contribute to realizing in a concrete way. (p. 196)

Dialectics encompass "built-in contradictions" (p. 197) that are culturally and historically grounded and often unconsciously internalized in ways that are not easily resolved or even immediately perceptible to the subject-actors. Instead, inner contradictions bring

forth plainly obvious surface-level tensions, disturbances, and problems that affect the daily work routines and lives of participants and produce unintended outcomes. For instance, in the case of the Browne County cohort, inner contradictions of joint activity between the school district and the university sent a ripple of systemic tensions through the course activity setting. Using activity systems analysis and Engeström's four levels of inner contradictions, I studied these tensions as a way to account for unintended outcomes of stress and frustration, as seen in figures 3 and 4.

Section III: Inner Contradictions and Tensions

In the process of constructing figures 3-5, I recognized primary contradictions within nodes of the activity systems, which I have summarized in Table 1. First, I noticed a lack of coordination in the shared object, which impinged on the teacher-learners' goal-directed activity. Generally speaking, the object of teacher PD (teacher learning and professional growth) was conflated with student achievement (improved test scores), resulting in increased responsibility and job-related pressures for teachers. This led members of the Browne County cohort to perceive their developing capacity as instructional leaders in the field of literacy to be the sole object of their university coursework. This perception subsumed all other objects of activity and compromised the cohesiveness of joint activity between the university course pilot and the school district. The primary contradiction of a shared object was intensified by a contradiction in tools associated with the blended mode of learning, which relies on evolving digital technologies and new literacies that often perform unpredictably. Moreover, a primary

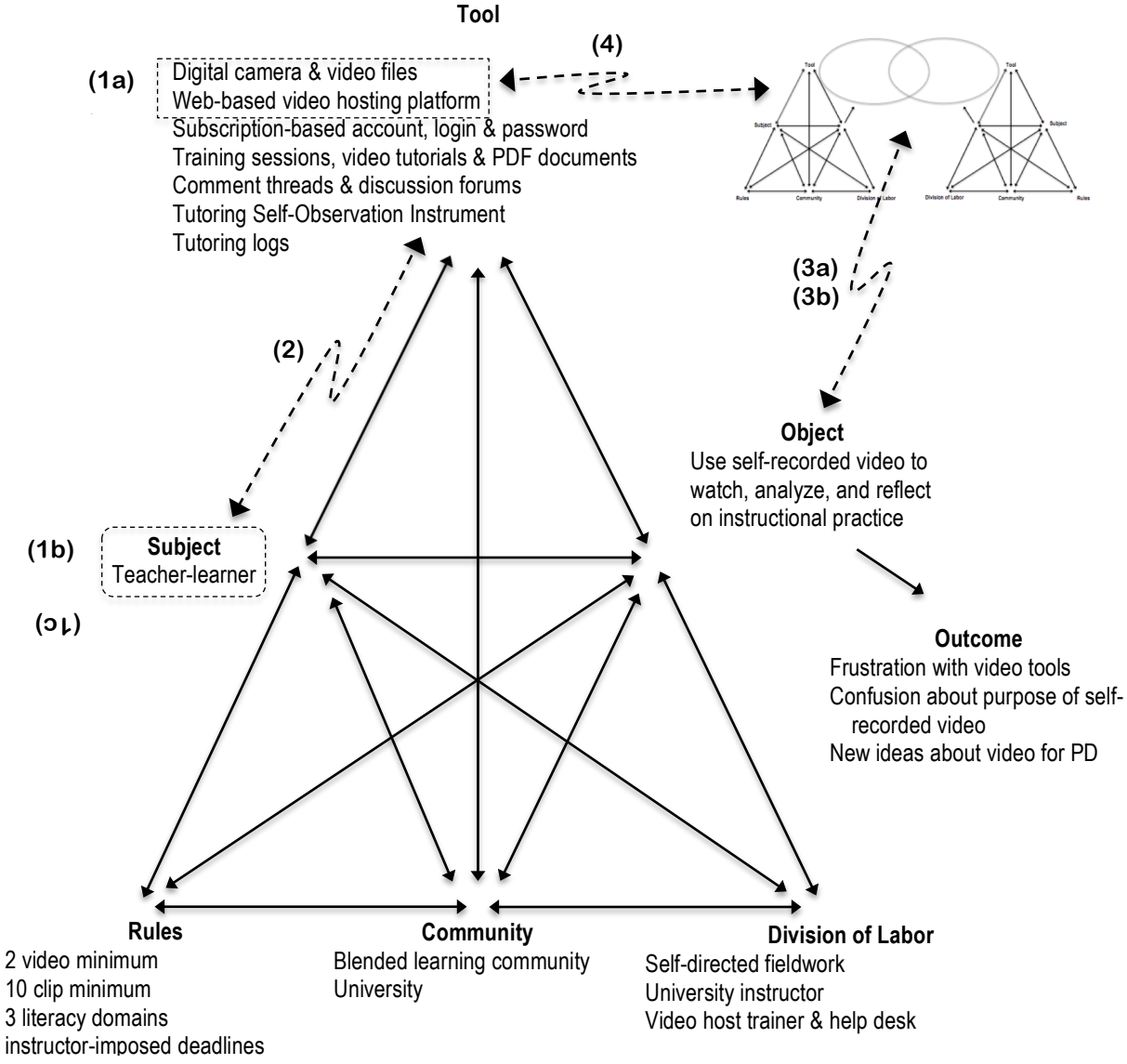
Table 1. Levels of inner contradictions and resulting tensions and disturbances

Four levels of inner contradictions (Engeström, 1987)	Contradictions (observed in this study)	Tensions, disturbances, problems, and issues (perceived by participants)	Participant quote	"Innovations and visions" (Engeström, 2000), acts of appropriation (Rogoff, 1995), "openings" (Sannino, 2008, p. 333)
		Disequilibrium ---→	resistance ---→	learning
Primary contradictions (within nodes)	Primary contradiction in tools: 21st century ICTs are inherently protean, ill-structured, and unstable.	Tools for capturing, uploading, and editing video performed unpredictably and differently for each participant.	"I just think it was, it was, there was so many factors in it about what could have, why it was hard, you know? And I think [the video analysis portal] had its own glitches, and we had our own stuff that we were trying to learn."	"Students …come into class with all kinds of skills, …and perhaps we should let go of some of the control and let them use the technology they are familiar with."
	Primary contradiction in shared object: The object of teacher professional development (teacher learning and professional growth) is conflated with student achievement (improved test scores), resulting in increased responsibility and job-related pressures for classroom teachers.	The participants performed multiple job-related roles: graduate student, classroom teacher, reading specialist, and Learning Leader.	"…[T]hey're [the school administration] trying to give us too much too soon, you know? And I think they are worried the national, you know, the Common Core Standards are changing, and they need to get us ready. And the professional development is changing, and obviously, we're 'Learning Leaders,' and we can train the people about literacy, and, you know?"	Create an online archive of video clips for improving literacy teaching and learning. As one teacher-learner said, it would be "helpful" to "build a library of videos that we can watch and say, 'OK, this is what we do.'"
	Primary contradiction in subject identities: Each participant orients differently to the challenge of lifelong learning.	Participants confronted the false dichotomy of teacher versus student roles, causing disequilibrium.	"This whole process is trial and error. I feel a bit guilty that there has been some wasted time tutoring without really doing it the right way."	Some teacher-learners suggested the self-observation instrument be provided earlier in the semester as a scaffold for integrating new skills and concepts with existing classroom practice.
Secondary contradiction (between nodes)	Participants must first learn to assimilate new tools, practices, and processes before they can successfully act on the stated goals and objects of the activity system.	The teacher-learners struggled with different video-related tasks: • recording/capturing • uploading/editing • watching/reflecting	"But the double-edged sword part,...It was hard learning something new when I was learning something new."	Participants devised their own videoing and editing routines, sometimes in opposition to recommended practice. Most, for instance, opted to record entire tutoring sessions. These same participants then edited video on their desktops o ensure quicker upload times: "As I was watching the video and choosing what to upload, I was already evaluating myself…"
Tertiary contradiction (from multiple objects)	Constraints imposed by time and geographic distance require a new, advanced mode of blended learning and new object-motives that conflict with pre-existing object-motives.	As a pilot of blended learning, the course format necessarily changed from instructor-centered to student-centered causing other aspects of the course to change, such as content, objectives, and feedback, which was more self-generated through video analysis.	"I guess being in the classroom for so long, you know, a lot of us are stuck in our ways, and, I feel like I have the weight of my school building on me. Um, and the tutoring, I think I wanted more of a, um, 'Yeah, what you're doing is working. What you're doing is not working.' Like, more of, I think that would have been a good face-to-face thing rather than videos."	The teacher-learners missed the accountability of face-to-face encounters with the instructor, leading one to recommend the use of video conference calls during tutoring sessions in lieu of self-videoing. This suggestion indicates a possible innovation for future practice, but it also underscores the abiding mismatch in object-motives.
		The teacher-learners and their instructors had different perceptions of the purpose/object of self-directed video capture, upload, and analysis and this caused confusion over how to use the self-observation rubric.	"I think that's [video] a great tool, as long as you know what is expected of you, as far as the rubric was concerned. Because, I think when we first went into that, we weren't exactly sure, you know, it was kind of like what was expected of us kind of changed as we went along, um, and so, we may have already taken some video, and then, come to find out that wasn't exactly what we should have had for evidence because, remember the rubric, came, it came later."	The 0-2 rating scheme on the self-observation tool lacked range and reinforced the notion that the rubric was for accountability. One participant, rather than assign herself a "zero" for certain criteria not observable in her video clips, left portions of the rubric blank. Another participant said, "It was almost a bit easier for me to just video tape the sessions and then reflect on what I could have done better. You know? Point out my strengths, and also say, 'Well, if I could go back and re-do it, this is what I would have done.' You know? Knowing that not being perfect would have been OK, you know?"
Quaternary contradiction (between multiple, neighboring activity systems)	University-initiated use of tools does not always align with the tools and goal-directed activity of the school system.	Teacher-learners relied on a diverse array of technology tools and platforms and, in some cases, did not have access to tools that performed at levels necessary for success in the university course.	"You have to have technology that works well within your system."	Despite district policy forbidding teacher and student cell phone use during school hours, some teacher-learners used their smart phones to complete various aspects of coursework, including video and audio capture of their case study children during tutoring.

contradiction existed in subject identities and orientations to learning, including values pertaining to the new literacies.

I identified additional inner contradictions, also summarized on Table 1. A contradiction beset the teacher-learners as they struggled to assimilate new tools, practices, and processes while they learned Reading Education content. The need for many of these new and unfamiliar tools was born of another contradiction, the contraction imposed by the geographic size and remoteness of their school district in relation to the university. Constraints of time and distance necessitated the blended mode of learning in the first place and introduced new object-motives that conflicted with traditional object-motives commonly associated with college-level courses. Last, the university-initiated use of new literacies practices and processes did not always align with technology initiatives in Browne County, where resources in terms of time, tools, and personnel were already spread thin.

"Alienating structures" (Roth, 2004, p. 4) and salient contradictions arising within and without the joint activity settings led to problems within the blended learning environment of the REED 537/539 course pilot. With regard to teacher-learners' enactments with new literacies, the activity of digital video analysis served as a sort of crucible, where contradictions were translated in very real ways. Multiple tensions, disturbances, and unintended consequences stemming from the inner contradictions of joint activity can be mapped onto the digital video micro activity setting. (See Figure 6.)



Tensions, disturbances, problems, and issues (perceived by participants)

(1a) Tools for capturing, uploading, and editing video performed unpredictably and differently for each participant.
(1b) Participants performed multiple job-related roles: graduate student, classroom teacher, reading specialist, Learning Leader.
(1c) Participants confronted the false dichotomy of teacher versus student roles, causing disequilibrium.
(2) Teacher-learners struggled with different video-related tasks: recording/capturing, uploading/editing, watching/reflecting
(3a) As a pilot of blended learning, the course format changed, causing other aspects of the course to change.
(3b) Teacher-learners and their instructors had different perceptions of the purpose/object of self-directed video analysis.
(4) Teacher-learners did not have access to technology tools that performed at levels necessary for success in the University course.

Figure 6. Tensions in teacher-learner goal-directed video activity

Dr. Reid and I chose the Web-based video hosting platform as an alternative activity setting in which to conduct observations of fieldwork associated with the practicum component of the course pilot. It was intended to function as an embedded activity setting within the blended learning community. The teacher-learner's object of activity within the Web site was to watch, analyze, and reflect on self-recorded video of her tutoring sessions with a struggling reader. Tools and artifacts available to help the teacher-learner in this process were: digital video hardware and software, subscription-based online account for video hosting, assorted training materials, comment threads, the Tutoring Self-Observation Instrument, and tutoring logs. Dr. Reid and I structured this activity with specific expectations and rules, including a minimum of two videos and 10 clips distributed across three literacy domains: reading, word study, and writing. The community in which the activity took place was the blended course pilot, within the institutional setting of the university. Most of the teacher-learner's work within the video hosting platform was individual and self-directed, with the instructor, video host trainer, and Web site help desk providing assistance as needed. The (intended) outcome of this activity was to improve literacy instructional practice and to develop capacity as a reflective practitioner. Nevertheless, tensions stemming from the four levels of inner contradictions all but derailed that outcome.

Tension 1a: "A chain of stupid technology nonsense"

Tension 1a stemmed from the primary contradiction in 21st century digital ICTs: they are inherently protean, flexible, and unstable. Digital video tools exemplify this primary contradiction, so, to represent this tension, a dotted line appears around video

tools in Figure 6. Due to an explosion in do-it-yourself digital multimedia in recent years, the tools for participation in video activity – the hardware and software but also practices for capturing, editing, uploading, and transferring – are infinitely variable and defy description and prescription. The teacher-learners were responsible for capturing and processing their own digital video files using whatever tools were at their disposal, and these tools performed differently and unpredictably for each participant. Consequently, video activity was fraught with conflict, be it at the time of capture or later during edit and upload. Referring to her video activity as "just a chain of stupid technology nonsense," one teacher-learner, Nicky, recounted,

> And it seemed almost unreal because, I'm telling you, the first time I went to upload a video – it was a 30-second video – it took me hours. I have witnesses to prove that I am not insane. I had people watch me, and that thing would not move. And I don't know why. And then that one day when I was here [at the university], it just did it like this [snaps fingers]. And I'm like, "Are you joking me right now? This is crazy!" (interactive interview, Jan. 22, 2013)

Tension 1b: "A bit of poison in the well"

Tension 1b was associated with the primary contradiction of a shared object between the university and the school district, where the school district's valuing of student achievement surpassed all other objects in importance. The teacher-learners assumed multiple roles and responsibilities in pursuit of this object: graduate student, classroom teacher, reading specialist, and district-wide PD leader. A related primary

contradiction in subject identities, in which each teacher-learner oriented differently to the simultaneous positioning as both “expert” and “learner,” added additional tension to the REED 537/539 course experience. The teacher-learners continually confronted the false dichotomy of teacher versus student roles, triggering feelings of disequilibrium. Therefore, a dotted line around the subject node represents Tension 1b in Figure 6.

For most members of the cohort, Fall 2012 signified the last semester in a two-year journey toward completion of the graduate-level reading specialist program. Then, quite unexpectedly, the cohort was tapped to begin training for a new model of teacher-centered PD steered by the district central administration. The pressure of being designated a district-level PD leader on top of juggling graduate-level coursework and their regular classroom duties, may explain, in part, some members' resistance to the technology-infused course pilot. One teacher, Elizabeth, compared Browne County’s PD initiative to “a bit of poison in the well” in relation to perceived tensions in REED 537/539:

> Well, I don't want to say that it started the whole thing, but it might have at least planted a seed in people's minds. Like, “Does this really matter, for me?” You know? “What's in it for me?” It's the human mentality sometimes, with certain individuals. And, um, I think, you know, and we had the Browne County Schools like, "Oh, now you are going to be Learning Leaders on top of being reading specialists, and we're going to give you the same stipend. And even though you are finishing the last leg of the journey, we're going to have you do this and have you work with

> this professional, and he's going to require you to do homework and have additional meetings within your team to look at these literacy processes." And, I mean, it was just *[emphasizing] a lot*. (interactive interview, January 12, 2013)

Tension 2: "A beast to slay"

A secondary contradiction between the subject and tool nodes presented a paradox to the teacher-learners insofar as their participation in video activity was concerned. This produced Tension 2 into the video activity setting and is represented by a two-headed dotted arrow between subject and tools in Figure 6. This tension speaks to the multiple realities of teaching with new literacies, in which literacy educators must continually balance their instructional focus so literacy remains foregrounded in technology-infused courses and not the other way around (Labbo & Reinking, 1999). The course pilot, for example, was a reading education course that happened to include new literacies; although, to fully engage with the course content, the teacher-learners had to first assimilate new literacies.

The teacher-learners experienced manifold issues with digital video. Some struggled with the process of recording and capture. Nicky started out recording with her cell phone but discovered "you couldn't ever get the right angle, the angle where you could see or put it where you could see yourself and your student." Nicky switched to a digital camera, only to encounter issues with the memory card. She said, "…I was like, 'Oh it's recording!' And then I went back, and I looked, and it was, no, just 39 seconds, and then it ran out of memory" (interactive interview, January 22, 2013). Other teacher-

learners, Nicky included, struggled at the point of upload to the Web-based video host. Still others struggled with attending to the object of self-recorded video (to self-analyze and reflect on literacy instruction) because they were preoccupied with the less-than-intuitive user interface within the video-hosting Web site. Elizabeth explained:

> …[W]hen you're uploading it, it's not, "I'm gonna log in, upload, reflect." There are so many steps in that, and a lot of different areas of my brain, anyway, you know? Because if you're evaluating yourself, and you should, like, really be looking deeply? That's mentally taxing, and then there's also the mental taxation of an unfamiliar program online, and uploading, and all that. So, it became such a beast to slay, you know? (Interactive interview, January 12, 2013)

Tension 3a: "We were blindsided"

A tertiary contradiction related to uncontrollable constraints of time and distance required a new, advanced mode of learning for the Browne County cohort. The blended learning format introduced new object-motives that conflicted with pre-existing object motives, producing two perceivable tensions into the video activity setting. Tensions 3a and 3b are illustrated in Figure 6 with a two-headed dotted arrow connecting the video activity setting to the other activity settings in which the conflicting objects are historically grounded.

Tension 3a concerns the fact that REED 537/539 was a pilot course, and, as such, was susceptible to change in content, objectives, feedback, and assessment as Dr. Reid and I adjusted to the affordances and constraints of online instruction. To begin with, the

blended learning format was a surprise to the teacher-learners, who enrolled in the course with the mistaken impression that it would be conducted in face-to-face mode. One Browne County teacher, Ann, said, "…[I]t just wasn't what we were told. And I think that was huge. It wasn't what we were told, and, so having to do this was a whole other issue, you know, … we weren't prepared for it." Ann's colleague Shannon echoed this sentiment during member reflections: "It was the fact that it was a pilot, and we were never told it was going to be a pilot" (July 2, 2013).

This tension compromised the video activity because the teacher-learners had anticipated direct feedback from an instructor based on in situ observation of their 539 fieldwork. Out of necessity, these observations would now be conducted through self-recorded video and online analysis tools. Where once the object-motive was to demonstrate mastery of instructional moves and scripts pre-defined by a university supervisor, this new instructional set-up foregrounded the object-motive of developing reflective practice. The conflicting object-motives frustrated the teacher-learners. During one contentious class session, in which the subject of video came up, Dr. Reid responded,

> I think the videoing is important. You know why? Because, um, there is nobody to observe you, all right? So you need to observe yourself. That's the only reason for the clips and the sharing, is, um, you know, to give us a chance to look at your tutoring. Alright? But, you know, us looking at it is not as important as you looking at it. (November 10, 2012)

Still, as Ann explained, she and her colleagues felt "blindsided" by the course redesign. She added, "I would have felt better if she [Dr. Reid] was giving us immediate face-to-face feedback" (member reflections, July 2, 2012).

Tension 3b: "I can see how people might cherry-pick the clips"

The tertiary contradiction of multiple objects also generated problems with the "Tutoring Self-Observation Instrument," a course artifact that Dr. Reid and I designed to assist teacher-learners with their work inside the video analysis portal. Because the students and instructors already had different perceptions of the purpose/object of self-directed video capture, upload, and analysis, this caused confusion about the purpose of the self-observation rubric. As course designers, our idealized object of video activity was for teacher-learners to develop a reflective stance. On the other hand, the teacher-learners, conditioned by performance evaluations and other accountability measures from the K-12 instructional setting, perceived the object of video activity to be accountability. Ann said,

> …I think that we are so used to, especially seeing our state rubric of, you do this, this, and this, and that's a three. You do this, this, and this and that's a five….It was just weird. I don't know. It was just, I felt like that was difficult because I wasn't real sure what was exactly *[pausing]* what she [Dr. Reid] was looking for. (interactive interview, January 29, 2013).

The rubric only exacerbated the performance aspect of video, as summed up by Nicky:

> …[Y]ou sort of want to show yourself in a better light, in a way. And maybe as a learner in the class, it's a bad thing, you know, not to

> acknowledge that, you know, "Oh, I'm not that good at this." Or, you know, but I think it's human nature to just try and show themselves from a better side….But I can see how people might cherry-pick the clips that would show *[pausing]* what *[pausing]* the professor or whoever, people evaluating, wanted to see. You know what I mean?

Tension 4: "You also have to have technology that works well"

As a quaternary contradiction erupting between neighboring activity systems, Tension 4 is another issue best viewed from the multiple realities perspective that encourages researchers to consider the varying pedagogical philosophies and instructional emphases that promote rapid uptake of new literacies in some settings and much slower integration in other settings (Labbo & Reinking, 1999). Tension 4 is depicted on Figure 6 with another double-headed dotted arrow that connects the tool node of the video activity setting to the Browne County school setting, where teacher-learners also access and utilize technology for goal-directed activity. Tension 4 developed out of the fact that the teacher-learners relied on a diversity of digital tools and platforms in their home and work contexts to fulfill the REED 537/539 course requirements, including video capture and analysis, but, in some cases, these tools were not sufficient. For instance, one teacher-learner named Victoria attempted to use her desktop computer at school to perform video uploads, until she figured out the computer was missing a crucial component. In addition, Victoria reported that recently purchased computers at hers and other schools in Browne County did not function until well after the start of the 2012-2013 school year. She saw value in digital video, but because of her difficult experiences

with the online video analysis portal, she said she would not consider appropriating that specific tool into her future work as a PD teacher-leader. She said, "I would use that [video] in training, professional development, but *[pausing]* it's, you know you also have to have technology that works well within your system" (interactive interview, February 22, 2013).

Section IV: Teacher-Learner Actions

Activity theory is primarily concerned with the influence of social structures on human development and appropriation (Barab et al., 2004a; Grossman et al., 1999; Smagorinsky, Cook, Moore, Jackson, & Fry, 2004). But what about the learners themselves? As Grossman et al. (1999), have argued, "Focusing solely on the setting would overlook the ways in which it is constructed by each person within it, making discrepant cases difficult to explain because they defy the motive of the setting" (p. 9). This is the heart of Rogoff's (1995) "participatory appropriation." Learner characteristics based on personal history, goals, knowledge, and values, undoubtedly affect the development of activity as much as the activity affects the learner. And, according to Roth (2004), interest in the mutual transformation of subject and object is a growing trend in the CHAT field.

To use CHAT to analyze subject-object transformation, one must distinguish different levels in the activity system. Briefly, those levels are: activity (the recurring work/purpose), actions (specific events realizing a goal, an observable action specific to the community), and operations (basic functions performed automatically by the participants) (Barab et al., 2004a; Lee, 2011; Roth & Lee, 2007; Roth, 2009; Yamagata-

Lynch, 2010). Researchers who want to understand matters of agency and identity in relation to productive work and learning should focus on actions (Barab et al., 2004a; Roth, 2009). Roth (2009) explained that analysis of actions reveals other dimensions (emotions, identity) that can be linked to the existing CHAT framework. Emotions at the level of action influence a participant's intermediate and long-term goals. Moreover, identity is formed on the basis of actions and outcomes: "...[A]ctions and outcomes make apparent to others both their goals and emotional states; and these actions and the outcomes in which the acting subject concretizes an aspect of herself are used in turn to construct aspects of the agent's identity" (p. 69). To analyze "the action level of activity," researchers should study an individual's use of tools, the affordances and constraints of those tools on the individual's work, and the resulting outcome (Barab et al., 2004a, p. 202). The point is, rather than theorize "processes of the individual mind" (p. 202), the investigator develops a comprehensive view of learning as a meditational process across interconnected components.

What happened at "the action level of activity" during the Fall 2012 blended course pilot? The teacher-learners acted on multiple objects of activity brought about by the inner contradictions of joint activity between Browne County and the university. Individual teacher actions were affected by the contradictions. The joint activity, coupled with intrinsically dilemmatic new literacies tools, such as video conferencing software and digital video, introduced numerous tensions into the course, and teacher-learners confronted these tensions in their own unique ways. A closer inspection of the experience through individual "boundary crossing" interviews (Roth & Lee, 2007) and again during

group member reflections helped bring individual teacher-learners' action steps into focus and revealed uniquely evolving perspectives on and orientations toward new literacies, evidence of what Roth (2004) would call the "dialectical relation" between subject and object. The activity portraits presented below depict this dialectic.

Shannon: "You can kind of muddle through and figure it out"

Shannon was in the middle of her twelfth year of teaching at the time of this study. She had taught her entire career in the Browne County school system, most of those years in the 1st grade. For the last year and a half, she was middle school reading specialist for 6th-8th grades. In her new post as full-time reading specialist, Shannon worked with small groups of readers who had been referred to her for reading interventions.

In our interactive interview, Shannon quickly invoked the idea of "learning" and continually positioned herself as a learner. This orientation extended to the new literacies. She said, "I am still amazing myself with things that I have been able to figure out because once you have experience with something, working with other things *[pausing]* you kinda know what to do." Shannon gave insight into her own professional disposition toward new literacies teaching. For example, she expressed admiration for the instructors' approach to teaching in a technology-infused environment saying, "We knew that you [the instructors] were learning the whole time. So, what I was impressed with was the determination you showed. Even when we had problems, it's like you didn't let it totally throw you. You just kept on and kept on and kept on. And I thought, 'If she could do that, I could do that.'"

Shannon used the term "techno-savvy" in reference to teachers younger than her. She surmised that as the blended learning mode of instruction evolves over time, future Reading Education students will likely not struggle as much as she did because they will have more familiarity with new literacies. We talked about the meaning of "techno-savvy." To Shannon, it meant "a natural understanding of how to go about doing things, and your mind just automatically goes to doing everything with, ah, technology, as opposed to the old-fashioned way…." Shannon said she did not possess this "natural" savvy. Instead, she arrived at her technology expertise by way of a trial-and-error process.

That said, Shannon regretted the "double-edged sword" of technology learning in the case of REED 537/539, where her main object was to learn how to assess and how to design instruction for young readers. In reference to the way the technology tools sometimes impinged on her ability to meet the course objectives, she said, "It was hard learning something new when I was learning something new." For example, uploading her video to the online video host was the hardest part of the course for Shannon, compounded by the intensity of taking two courses in one semester. Her final work flow at the end of the semester was less than ideal:

> I don't even know how many [video clips] I got of each thing [rubric criteria]? I know I didn't get the right amount of everything. But I tried to get some of everything, but I don't even know that I did. I didn't have a good system for keeping track of what I had done, and so I just said, "Forget it." And I put tons of clips on there, but I don't know really how

> many of them. And it was because of rushing, and I think some of that will be alleviated when you have a semester [for each course].

The problems of how to record and when to record and the issue of bias affected her actions with respect to video analysis. Her experience with videotaping her own teaching would have been improved if "not being perfect would have been OK," but the self-observation instrument and clip requirements subverted this message for Shannon:

> Yeah, that, that was, that was probably the hardest part, I think, of the course, was doing that videotaping and then having to watch for certain things….I think a lot of us would want to do the best and would want to pick out the best clip. But if we knew we could, if, one clip, you know, *[emphasizing] long* one, but one clip, um, and then, go through it, reflect on it, and, um, and then put where we could have improved….And so, to kind of have that kind of assignment as opposed to, I mean, the last day that we met online, I think Dr. Reed said something about four [clips] for each thing, and *[emphasizing] that* about blew me over. I was just, "There's no way I could do that!" You know?

Overall, she would have preferred just videotaping and watching and reflecting on what she saw, without using the online analysis tool and without the pressure of adhering to "standards."

Although Shannon struggled with the mechanics of digital video, she appreciated watching herself in session with her case study child and was grateful for being encouraged to record and watch her own tutoring sessions, an action she said she never

would have done otherwise. Shannon elaborated,

> ...[I]t was very beneficial for *[emphasizing] me* to see how I was interacting with the kids and how I was presenting the information because this is new, this was a new, I mean, I feel like I'm a new teacher again, you know? And so, therefore, there's a lot of things that I, um *[pausing]* that I question and reflect on and wonder about. You know, "Am I doing this correctly? How can I better do this?"

Despite her frustrations with digital video, Shannon professed a changed perspective on learning new literacies:

> I'm doing things now that I just didn't think I would be doing. I've just gotten more at ease with it, so I don't really think of myself as being techno-savvy, but I'm learning. I'm learning the pieces that now, it's like when you learn concepts about things, when you run into another thing? Some of the concepts are similar, so you can kind of muddle through and figure it out, you know?

Elizabeth: "I brought a lot of baggage with me"

Elizabeth was in her fifth year of teaching high school English and had been teaching in Browne County schools for two and a half years. She has taught every grade level of high school English. In addition to being a full-time English teacher, she described herself as an "in-house" high school reading specialist, who serves as the faculty literacy expert. Elizabeth's background as an English teacher framed many of her insights about the REED 537/539 course experience.

At the start of our interactive interview, Elizabeth immediately jumped in about

the online digital analysis tool. She said she regretted doing what a lot of teachers do: "I just kind of got into the mentality of, 'Well, if it's going to be like this, I don't have time to deal with that. I don't have time to work out the kinks for myself.'" Elizabeth attributed this "mentality" to a problem of "baggage," saying, "…[T]here is a certain aspect of life, that happens, you know? That everybody brings with them, you know? Other struggles and responsibilities and everything." Like her colleague Shannon, Elizabeth, who is in her thirties, also considered the influence of a teacher's age on the willingness to learn new literacies:

> Well because I work with high schoolers, and I can see what they can do with their technology….And I'm to the point now, and I was just talking this over with a colleague yesterday. I said, "You know, seeing what they [high school students] can do, I'm realizing more about how these older people feel because I don't have the time in the day anymore to learn all the new things that are going on. And these kids are growing up with it, and they naturally kind of know.

Elizabeth compared a teacher's process of facilitating classroom technology to the process of lesson planning and drew a parallel between teacher practices for successful technology integration and successful language arts instruction. Both activities require a certain flexibility and openness to what diverse learners bring to the table:

> The state and administration want teachers in the classroom to provide such differentiated instruction for every student. They want us to provide the students with so many different roads to arrive at an understanding of

> the standards, and they don't seem to understand how challenging it is to provide all of these different avenues. However, I am learning that if I tell the kids the ultimate goal, and then let them use what they know to reach it, I wind up learning from them, and the work they give me is much better.

Elizabeth made several recommendations for improving the digital video experience and shared some of her own vision to that end. Elizabeth advised that future REED 537/539 students should just let the video recorder run, so it captures a more authentic picture of the tutoring work in its entirety. (This sentiment was repeated in interactive interviews with other cohort members.) Elizabeth found herself in a situation where her case study child was too easily distracted by the presence of the camera. It was best if she just turned on the recorder and forgot about it. Of course, this resulted in incredibly long video segments, which were more authentic but nearly impossible to upload to the video Web site. The advice given by the Web site trainer was to *not* edit video before upload. This proved unworkable for Elizabeth. She found she had to make smaller clips, or the upload took too long. So, she edited her video on her desktop, using a popular freeware video editor that came with her operating system. This action proved to be Elizabeth's first pass at evaluating her own instructional practice. She wished she had been more conscientious of writing down her analysis while watching and editing the clips, because many thoughts about her teaching came to her at this time. She felt the online video analysis portal created an unfortunate duplication of effort when she had to upload the clips and re-analyze them using the self-observation rubric that was embedded

in the Web site. We talked extensively about Elizabeth's process of self-reflection and the affordances and constraints that the online video-hosting tool brought to this process. Elizabeth drew a comparison between a teacher's self-reflection on video and a struggling reader's comprehension: both activities require "deep thinking" and are hindered when the user experiences frustration.

Elizabeth proposed that the actions of video recording, uploading, and sharing be introduced earlier in the course. She said it would have been better to introduce the video hosting platform at the beginning of the semester and require everyone to become familiar with its functionality by performing small, easy tasks at first. Elizabeth also mentioned that she hoped a digital clips library would be used purposefully to archive examples of teaching practices as a reference for future students in the reading specialist course sequence. As a secondary ELA teacher, she was especially unfamiliar with the word study regime applied in REED 537/539, and a clips library would have benefitted her by showing how to implement a word study intervention.

Grace: “I will go in and spend hours learning what every button does”

Grace is a six-year English/Language Arts teacher with Browne County schools. During those six years, she has taught 3rd, 7th, and 8th grades. Her current position is as a 7th grade ELA teacher and reading specialist. When asked to describe the course experience, Grace's first words were, "Honestly? It was torture." The experience was "torturous" and "frustrating" not because of the technology, but because time was "wasted" reviewing technological aspects of the course, which were nothing new to Grace. Grace had earned her Master's degree through an online program and, along with

Shannon and a few other cohort members, had already taken one blended online course in Action Research as part of the reading specialist program at the university.

Grace identified herself as one who loves technology. She acknowledged that technology is "not always your friend," but, for the most part, it doesn't "mess up much with me. I don't have that problem. I don't know why." As an unofficial technology coach in her school, Grace frequently volunteers to troubleshoot problems for her colleagues, but only when she already knows the tool thoroughly. She learns as much as possible about a tool, website, or application before she attempts to help colleagues or students. She said, "There's not a lot of things that go wrong, usually. The worst thing that would happen is, a video wouldn't play. And I would say, 'OK, this is what happened, and let's move on with our lives.' Technology really doesn't go wrong. *[pausing]* It's just stuff I've used over and over and over...."

Using a tool "over and over and over" sums up Grace's basic approach to technology learning. She said, "I don't care what the book [user's manual] says. I don't care about – I don't read the book normally, unless I need something specific, and then I can go find it." Grace applies this approach to her own instruction. She practices a new tool or application over and over before presenting it to colleagues or students. Moreover, Grace said it was obvious to her that the REED 537/539 instructors were learning the technology alongside the students and sometimes were planning instruction on the fly. She said this wasn't necessarily a "bad thing," but it contrasted with her own approach:

> If I am troubleshooting technology at a school, it's because it's something I already know how to do….I can walk anybody through anything, if it's

> something that I can *[emphasizing] already* do....[I]f it's something that I know I'm gonna *[emphasizing] have* to do, I will go in and spend hours learning what every button does and, "When I push this button, what does it do? And, if I push this button?" *[pausing]* I love that stuff! *[emphasizing] I love it!* A lot of people don't. *[pausing]* A lot of people just don't want to, and *[pausing]* just *[emphasizing] don't*.

Consequently, she was frustrated by her Browne County colleagues in the virtual learning environment, who she said were only "half listening," thus causing the instructors to repeat technology explanations over and over again. She said,

> …I sat and listened to a lot of the explanation, and then they would ask the exact same question that you just talked about. I mean, I sat and listened. I didn't have anything else to do because I already knew what – and I'm not trying to be "Susie Technical" over here. I just "get it." That's one of the things I get really easily.

Grace repeatedly used the word "frustrating" to describe the course on two levels. First, Grace's experience was frustrating because of the time devoted in class to troubleshoot technology issues, when Grace wanted more time to delve into the course content. She said, "...I needed class time because I really was lost in the content. I was lost in it." A second source of frustration, somewhat related to the first, was the effect of teaching REED 537 and 539 concurrently. This introduced a problem of "logistics," not least of which was the fact that class was held online nearly every Saturday morning from 9 a.m. to 1 p.m. In addition to sacrificing Saturdays to spend long hours in front of the

computer, the course structure did not make sense to Grace because "you've got to do that initial one [REED 537], the diagnosing, before you can do...the intervention [REED 539]." Like her colleagues, Grace suggested the courses not be combined again in the future.

Grace said it took her about ten minutes to figure out the video hosting platform, but because her video camera was outdated, she had to devise an elaborate procedure to convert her video from analog to digital and edit it down into manageable file sizes for upload. This was "time-consuming" and another "point of frustration." Grace explained,

> ...[G]etting, getting the video prepared to put it online was the problem for me. But I went back, and I had to clip it because I would never have gotten thirty minutes of video uploaded,…so I put up short segments *[pausing]* and going back through and watching...It was a little torturous. I see the value in, in, in going back and looking at it, um, but it's, it's a, um, let's say she's [the case study child] writing something? I just left the camera on. You know? Even though I was sitting there and watching her and maybe prompting to do something, as she was writing? I videotaped *[emphasizing] all* of it.

Beyond upload, the clipping and analysis utilities on the hosting platform were easy for Grace to use:

> Once I got the video uploaded, it, you know, a couple of hours was all I had to fool with that….But by the time I, um, uploaded video…, I knew exactly where the clips were, I knew exactly what I was going to do

> because I had watched it two or three times. I was writing down times within the thing. I cut, I edited my video before I put it up....So mine was pre-edited, pre-cut before I uploaded it.

For Grace, technology preparation and expertise is preliminary to teaching and learning. For instance, she recommended that technology issues be addressed on the first day of a blended, online course:

> Get it *[emphasizing] all* out of the way. Make 'em, you know, make them show up with their computer, make 'em be online, make sure it's gonna all work, and don't give them the option to – you know, make sure they know on that first face-to-face that, "This is what we're going to do. You better be prepared technology-wise to do this because this is what we're doing."

Chapter Summary

This chapter contains results of analysis of joint activity between two historically constructed, culturally grounded activity systems, of which the REED 537/539 course pilot was but one component. After providing an overview of the conceptual tools I used to conduct my analysis, I described and graphically depicted the contradictions and tensions of joint activity. The triangular representations of activity presented in sections II and III may give appearance, at first glance, of the passive teacher-learner-as-subject, prone to a tide of situational forces beyond her control. An enduring critique of activity theory is that it does not adequately respect the affect or agency of individual subject-actors. Recent innovations in CHAT suggest, however, that researchers may closely attend to participant action in such a way as to ameliorate this supposed limitation. For,

> ...practical actions do not just make nice artifacts but bring about changes in the entire system, including the identity of the subject; these changes ripple through the system in part because of the mediation of relation by a third entity....That is, although the Engeström triangle depicts the structure of activity, it is inherently a dynamic structure, continuously undergoing change in its parts, in its relations, and as a whole. The triangle embodies the historical dimensions in terms of which human activity and all its various dimensions, including knowing and learning, have to be understood. (Roth, 2004, p.4)

The teacher portraits in Section IV illustrated "human activity and all its various dimensions": three teacher-learners' actions and their distinct perspectives on those actions during the Fall 2012 course activity. The value of this "profoundly dialectical" approach (Lee, 2011, p. 418) is that it enables the researcher to consider participants' different stances and their various goals and objectives regarding work and learning. Glimpsing this complexity enables the teacher-researcher to consider implications for future practice based on "a politics of hope – all participants can be empowered despite initial asymmetries of privilege and roles" (p. 418). In the case of REED 537/539, the findings rendered herein certainly indicate variation and asymmetries in the teacher-learners' experiences as members of a blended learning community. In the next chapter, I share my interpretations of these findings and discuss how they implicate my future enactments as a facilitator of blended learning.

Chapter Six: Integration of Findings

This study represents my coming to terms with a vision of teacher professional development (PD) that emphasizes muddling over mastery. Where once I intended to track teachers' cognitive development and learning expertise in relation to 21st century digital tools, I instead became interested in teachers' identity learning, not as a prerequisite for expertise but as a *hallmark* of it. At the outset of this study, I asserted that new literacies practices and processes provide perfect "boundary experiences" (Geijsel and Meijers, 2005, p. 424) for instigating teacher identity development. As the study progressed, I refined my focus on inservice literacy teachers' enactments with digital video within a blended learning context. Ultimately, this study investigated the unintended consequences, tensions, and key developments arising from teachers' analysis of and reflection on self-captured video.

A story of resistance and struggle in teacher use of 21st century information and communication technologies (ICTs) does not make for a profound contribution to a research base already rife with shortcomings of technology-infused PD. However, few studies attempt to interpret the experiences of literacy teachers using new literacies, and even fewer have deployed the tools of Cultural-Historical Activity Theory (CHAT) to do so. Activity theory (AT), provides tools and heuristics for making sense "beyond the commonsense" (Smagorinsky et al., 2004, p. 21). As a "unified theory of human development" (Stetsenko, 2005, p. 75), AT enables the researcher-practitioner to productively confront tensions and situational forces in studies of complex learning environments, including technology-infused teaching and learning.

In her 2008 study of the impact of teachers' conceptualizations of "cutting edge" ICTs, Stolle asked, "What does it mean to be cutting edge?" (p. 65). If this question concerns tools only, it is insufficient. Attitudes, mindsets, and orientations must also be "cutting edge" to meet each new tool as it crosses over into the mainstream. I agree with Stolle's assertion that, too frequently, our desires for new technologies in K-12 education run deeper than our surface-level "envisionments" for their use (p. 65). Citing a lack of transformation in practice, even among those teachers who professed a belief in the transformative powers of digital ICTs, Stolle argued that change in teacher education and PD "needs to occur at a deep level" (p. 66). Likewise, the present study seeks to understand how to leverage tensions of new literacies teaching and learning for deep-level change. By engaging with teacher-learners through interactive interviews and member reflections, I have learned to consider "almost unnoticeable transitional actions" (Sannino, 2008, p. 329) as potential pathways toward creative envisionment and innovation.

In the next three sections, I present interpretations, implications, and ideas for future inquiry as they relate to the key developments stemming from the Fall 2012 blended learning activities of teacher-learners in REED 537/539. Then, in my final section, I will return to the basic convictions upon which this study was conceived: if we engage teacher-learners in authentic, hands-on problem-solving with 21st century ICTs, we can make advantageous use of dilemmatic aspects of these tools for shifting teacher beliefs toward a "redefinition of what it means to teach" (Richardson, 2010, p. 154). Only then can we reasonably hope to develop these new literacies capacities in young people.

Interpretations

My process of inquiry sensitized me to the double-bind of conducting PD with practicing teachers, where school-as-workplace lends immediacy and relevance to teachers' university-based learning even as it powerfully elevates teachers' professional authority (Grossman et al., 1999; Smagorinsky et al., 2004). As Smagorinsky et al. (2004) wrote, "From an activity theory standpoint, the motive of the school setting will potentially override that of the university setting because of the change in role from student to teacher..." (p. 22). For this reason, as I summarize and interpret my findings, I will revisit my research questions in reverse order:

- What situational forces influenced the teacher-learners' experiences as members of a blended learning community?
- What were the teacher-learners' perspectives while using new literacies tools and practices within a blended learning community?
- What did the teacher-learners' articulations reveal about the role of identity during the blended learning experience?

I first will consider teacher perspectives and identity characteristics before I turn my attention to situational forces within and between activity settings, which I view as a more promising avenue for effecting change. The "persistent disjuncture" of teachers gradually adopting the values of their school culture is already documented across studies (Grossman et al., 1999, p. 3). With AT, "we can view these findings as less contradictory and more as pieces to a larger puzzle….Activity theory is capable of unifying diverse research findings because of its emphasis on the settings in which conceptions of

teaching develop" (p. 4). So, as an alternative to probing for a single, satisfactory explanation of this phenomenon, I relied upon an activity theoretical perspective that acknowledges "myriad causes and effects" of enculturation as it asks, "Under what circumstances do particular kinds of changes take place?" (p. 4). I sense that my time and effort are better spent on trying to alter "circumstances" of setting than trying to alter participants' self-understandings; although, as will bear out in my discussion, it is difficult to isolate effects of context versus effects of learner characteristics because of the powerful dialectic that exists between the two.

Subject Characteristics and the Impact of Variant Teacher Identities

According to Grossman et al. (1999) "one activity setting is open to multiple construals" (p. 8). The authors explained, "Thus, while two teachers may work at the same arena (e.g., a school), they may have distinctly different understandings of the school setting based on their own goals, histories, and activities within the school arena" (p. 8). I term this "the primary contradiction of subject identities." The primary contradiction of subject identities, as illustrated herein, demonstrates why studies focusing solely on teacher cognitive development, without regard for identity, typically fall short of explaining varying levels of appropriation of digital tools and new literacies. As Grossman et al. (1999) explained, a "lack of appropriation does not necessarily involve a lack of understanding" (p. 18). To further examine the impact of this inherent contradiction, I re-coded all the data related to the three teacher-learners profiled in Chapter Five (Grace, Elizabeth, and Shannon). I used the following selective codes: self-conception, accommodation, and appropriation/innovation. After coding, I looked for

patterns of actions as they related to the individual teacher-learner's self-concept and her enactments with digital video as a new literacy.

Self-conception. This code refers to teacher dispositions and is based in part on the "relational notion of identity," as defined by Smagorinsky et al. (2004), who wrote, "One's identity, then, is not simply the emergence of internal traits and dispositions but his or her developmental engagement with others in cultural practice" (p. 21). I found that the dialectic between the teacher-learners' variant identities and the four levels of inner contradictions influenced levels of accommodation, appropriation, and innovation at the "action level of activity" (Barab et al., 2004a, p. 202). The tensions affected the teacher-learners' identity work, while the teachers' identities interacted with the tensions productively and, in some instances, counterproductively.

The participants – specifically, Elizabeth, Grace, and Shannon – balanced competing objects of, first, learning how to be reading specialists and, second, leading literacy initiatives in their county school system. Some participants managed this more successfully than others, but, more often, the goal-directed activities of REED 537/539 did not realistically mesh with the object-motives of the participants. This led to resistance, as in the case of Grace. Grace possessed a pronounced subject identity and self-efficacy in relation to her background and experience with digital ICTs. Therefore, Grace viewed the course segments designed to familiarize participants with new tools for online learning as "torturous" and "frustrating" (interactive interview, March 20, 2013). Grace's primary object-motive was not to learn new digital literacies but to master course content related to Reading Education: "…[W]e wasted a lot of time. And I needed class

time because I was really lost in the content." On the other hand, a positive dialectic between subject identity and technology outcomes existed for Shannon, who self-identified as a learner numerous times across the data set. Shannon expressed an object-motive that privileged questioning, wondering, and reflecting and that broadly oriented to "learning something new." In contrast with Grace, Shannon reported gaining insight from her experiences with new literacies, saying, "I was inspired to do things" (interactive interview, February 6, 2013).

Accommodation. For the "accommodation" code, I borrowed heavily again from Smagorinsky et al. (2004), who defined it as gradual, grudging acceptance. Acts of accommodation result from "a teacher's deference to more powerful forces in the environment" (p. 19). Suffice it to say, this may well be the closest universal explanation for why K-12 educators, an inordinate number of whom are female, are characterized in the literature as prone to adopting the dominant values and perspectives of their respective institutions. When participating in a July 2013 member reflections meeting with me and four of her colleagues, including Grace and Elizabeth, Shannon gestured to the group sitting around the table and said, "We want to do our best. It's our nature." While this may have been *generally* true of the cohort as a whole, levels of self-reported accommodation actually varied from participant to participant. For example, observational data and interactive interview transcripts did not contain evidence of accommodation by Grace, which I interpret as a direct result of her unwavering sense of subject identity as expert.

In contrast to Grace, Elizabeth frequently invoked her identity as a teacher, even calling out her colleagues' resistance to technology by saying, "We are all teachers of *[emphasizing] something*. Why can't we just help each other out?" (interactive interview, January 12, 2013). In her interactive interview, she described herself as working in survival mode as she tried to please everyone, saying, "I want to do my best job, and I don't want to disappoint anybody. That's just my natural disposition." These "naturally" accommodating dispositions closely align to the third tier of Grossman et al.'s "Five Degrees of Appropriation." At this level of appropriation, the teacher "is making some effort to grasp the official conception, yet is succeeding in doing so only at the surface level" (p. 17). When the teacher-learner accommodates, she adopts surface features of new tools and practices without full appreciation of their conceptual underpinnings.

An example of "appropriating surface features" (Grossman et al., 1999, p. 17) occurred when Elizabeth suggested we drop self-videoing of the case study sessions in favor of synchronous video conferences, using a tool such as Skype (member reflections, July 2, 2013). This initially struck me as a potential innovation in course design. Upon further reflection, I consider this an act of accommodation on Elizabeth's part. Instructor-initiated conference calls do not actually align with the pedagogical rational and object-motive of student-centered, self-directed video analysis and reflection in practice.

Appropriation/innovation. This final code combines key ideas from Rogoff (1995) and Engeström (2000). I applied this code to descriptions of teacher-learner experiences that prepared them for future participation in online learning communities as well as examples of new actions and ideas contributed by the teacher-learners. My

conception of appropriation/innovation aligns somewhat imperfectly with the second-to-last level of Grossman et al.'s (1999) "Five Degrees of Appropriation," which is appropriation informed and motivated by a firm grasp of underlying theory. Within the context of REED 537/539, I noticed that the teacher-learners experimented with "innovative action" (Engeström, 2000, p. 966), but their suggestions for new uses of digital ICTs were more often based on a practical need than an underlying theory.

The teacher-learners improvised heavily while capturing, uploading, and editing digital video. Grossman et al. (1999) stated that modification of practices and processes by participants is to be expected: "Whether the reconstruction is consistent or inconsistent with the authoritative or official conception depends on the social context of learning and the individual characteristics of the learner" (p. 19). This was the case with the previous example of Elizabeth, who demonstrated adequate technical facility with digital video but expressed a preference for a live, synchronous video feed with her professor instead. Shannon, who was less versed in matters of video, tried to record selective segments of her tutoring sessions, but fumbled with the record and pause functions on her camera to such an extent that the entire mechanism would occasionally shut off, unbeknownst to her until it was too late. Like several of her colleagues, she finally resorted to recording each tutoring session in its entirety, saying the process went more smoothly "if I could just push 'record' and go with the whole thing" (interactive interview, February 6, 2013). Sannino (2008) claimed participants will react this way when faced with conflicting motives for activity: "Commonly an individual without external support surrenders in front of the conflict and searches for easy ways out" (p. 332). Whether Elizabeth's and

Shannon's approaches represent "easy ways out" is a matter of opinion. Even so, their ideas and actions were born of unique learner characteristics and object-motives, irrespective of the conceptual underpinnings and object-motives of our course design. Infinitely variant subject mindsets virtually guarantee that no two learners will orient in quite the same way to the challenges imposed by 21st century ICTs. It may be more productive to consider a different node of the activity setting: the object.

Situational Forces Within and Between Activity Settings

When objects of activity are aligned, appropriation increases. However, alignment is difficult as educational activity settings become increasingly overlapped and nested (Grossman et al., 1999). If the object-motive "provides a setting with a sense of purpose that implies a code of suitable conduct" (Grossman et al., 2004, p. 7), what happens, then, when motive is unclear or uncoordinated? Further, what about the "tertiary contradictions" (Engeström, 1987) stemming from multiple objects of conjoined settings? The present study exhibited instances of both a primary contradiction of shared object and a tertiary contradiction of multiple objects.

Effects of shared object. In K-12 education the conflation of objects is perhaps more commonplace than ever due to the impact of more than 20 years of the high-stakes accountability culture. Stolle cited "conflicting messages" of the No Child Left Behind legislation that mandated technology literacy for all eighth graders, "while valorizing traditional literacy practices through their assessment model of standardized tests" (p. 67). In reference to K-12 education settings, Edwards (2008) wrote,

> "The social practices of schools are notoriously difficult to change for a wide range of totally understandable reasons, most of which relate to the high stakes national and international accountability systems in which most schools are enmeshed; and to the precarious fragility of systems of social order in many schools. Schools, therefore, operate as tightly bounded systems where retaining the stability of within school social practices is a priority for both students and teachers." (pp. 375-376)

The Browne County school system is no exception to this trend, in which an overarching concern for measureable achievement seemed to eclipse other venerable goals: respect for diversity, the social construction of knowledge, and the socio-emotional well-being of a community of learners.

For the REED 537/539 teacher-learners, their professional development as reading specialists was directly linked to the expectation of improved scores on literacy achievement tests, causing a pervasive sense of disequilibrium that intensified over the course of the Fall 2012 semester. Elizabeth said,

> …[T]hey're [the school administration] trying to give us too much too soon, you know? And I think they are worried the national, you know, the Common Core Standards are changing, and they need to get us ready. And the professional development is changing, and obviously, we're "Learning Leaders," and we can train the people about literacy, and, you know? (interactive interview, January 12, 2013)

As a systemic, long-term contradiction, the shared object generated tension and conflict on the 537/539 participants. For the most part, the teacher-learners grudgingly accommodated the disequilibrium imposed by this contradiction and performed their multiple job roles, allowing for few "developmental possibilities" (Engeström, 2000, p. 966). One exception to this occurred when Elizabeth, who strongly identified with her role as classroom teacher, suggested archiving the REED 537/539 video clips to support future literacy teaching and learning. She said it would be "helpful" to "build a library of videos that we can watch and say, 'OK, this is what we do'" (interactive interview, January 12, 2013).

Effects of multiple objects. Despite conservative, almost calcified, institutional cultures, schools are frequently the recipients of unwelcomed, externally mandated reforms that introduce new activities, objects, and tools into the pre-existing activity system. The tertiary contradiction of multiple objects of joint activity often originates out of nested or overlapping activity systems, such as colleges of education and teacher professional development programs. Edwards described how the introduction of new tools, such as new pedagogy or curricula, disrupt rules and divisions of labor, long-enforced by high-stakes accountability culture: "These are top–down changes backed up by alterations in the wider socio-cultural conditions in which schools operate which result in major disruptions in the dynamics of schools as activity systems" (Edwards, 2008, p. 376). In the case of this study, constraints imposed by time and geography inspired a new, advanced mode of online PD and, along with that, new tools and object-motives that had to vie for the attention of teacher-learners within the overriding and dominant value

system of traditional, K-12 education. Sannino (2008) said settings with multiple activities and, by extension, motives, often send the subject down developmental pathways that are “far from smooth” (p. 331). Shifts from one dominant activity to another do not necessarily "follow institutionally predetermined paths in which changes coincide with individual needs. Also, dominant activities can become dysfunctional protective or constraining enclosures that may literally ‘dominate' development to the point of stagnation" (pp. 331-332). When new motives vie for acceptance amid long-established ones, the subject is likely to experience frequent conflict (Sannino). The Browne County cohort experienced two distinct conflicts of this nature.

First, as a pilot of blended learning, REED 537/539 changed from a familiar and comfortable instructor-led course format to a more student-centered course format. Out of necessity, then, other aspects of the university course changed, including content, objectives, and mode of feedback, which was entirely re-conceptualized with the addition of self-generated video analysis of classroom practice. Consequently, the teacher-learners missed the face-to-face encounters with a university-based instructor. As one participant remarked, “… I think I wanted more of a, um, ‘Yeah, what you're doing is working. What you're doing is not working.’ Like, more of, I think that would have been a good face-to-face thing rather than videos” (Ann, interactive interview, January 29, 2013).

Second, the teacher-learners and their instructors had different perceptions of the object of self-directed video capture, upload, and analysis. This resulted in conflict and confusion centered specifically on the use of the self-observation rubric that was to be used in tandem with the online video analysis portal. (See Appendix G.) The teacher-

learners oriented to the rubric not as a tool for inducing self-reflection, but as an accountability device for identifying "evidence" of their practice. For instance, when the rubric was presented, some teacher-learners, who had already videoed their case study children, felt they would have to re-do and re-record their tutoring sessions to fit the rubric criteria: "…[W]e may have already taken some video, and then, come to find out that wasn't exactly what we should have had for evidence because, remember the rubric, came, it came later" (Victoria, interactive interview, February 22, 2013). The rubric's 0-2 self-rating scheme reinforced the notion of accountability. One participant, sooner than assign herself a "zero" for criteria not exhibited in her clips, left portions of the rubric blank because "zero" connoted a punitive evaluation to her.

Adoption of tools, whether they are practical or conceptual, is a sign of appropriation. Practical tools are local, immediate, utilitarian. Conceptual tools are principles, frameworks, and ideas that act like heuristics to guide instructional decision-making. Use of practical tools is guided by conceptual understandings (Grossman et al., 2004). Thus, the participant who sees value in trial-and-error, experiential, learner-centered instruction will appropriate more artifacts of "process-oriented pedagogy," and the participant who has adopted the entrenched values of her institution will resist such tools (Grossman et al., 2004, pp. 8-9). The self-observation instrument was a practical tool aligned with principles of retrospective reflection on practice. The fact that the teacher-learners perceived it less as a springboard for self-learning and more as a hoop of accountability indicates the extent to which the reform era mindset has taken hold.

Even Shannon, a participant with a pronounced orientation to self-learning, had difficulty with the rubric, which, by suggesting "standards" of perfection, hindered her process of self-reflection. She scoured her video looking for clips "that showed something specifically" (interactive interview, February 6, 2013). This act of compliance resembled accommodation, except Shannon remained circumspect about the potential affordances of digital video under more ideal circumstances, in which time and "being perfect" would not be issues. She envisioned a process in which teachers could watch video and draw their own conclusions about strengths and areas of improvement. Shannon eventually followed this route and came to view the rubric as just "a guide" for reflection. However, that process became too time-consuming, and eventually, in the end-of-semester rush, she just uploaded "tons of clips" to the video analysis portal. Nonetheless, Shannon's self-described "muddling" served as a highly productive tension, allowing her to creatively envision new uses for digital ICTs in ways that rivaled her peers. Sannino (2008) proposed the term "transitional actions" to mark these shifts in activity systems.

Transitional Actions at the Intersection of Competing Object-Motives

Despite instances of disruption and resistance, I noticed, with respect to digital video in particular, a pattern of seemingly "momentary, isolated, and accidental" actions (Sannino, 2008, p. 332). According to Sannino, these "transitional actions" may accumulate "to the point of redefining the individual's social relations and material infrastructures around a new object" (p. 332). For instance, all of the participants profiled in this study recognized affordances in digital video as a tool for improving classroom

practice. Grace acknowledged the "value" of looking back and noticing aspects of her instruction, especially her facial expressions and tone of voice (interactive interview, March 20, 2013). Elizabeth and Shannon echoed this sentiment in their interviews. However, all three teacher-learners abandoned recommendations to selectively record short video clips of case study interactions, opting instead to record *everything* they did during their case study tutoring sessions. This decision seemed counter-intuitive, as it resulted in massive amounts of large, unedited video files that were difficult to upload to the video analysis portal. Nonetheless, this action was crucial to preserving the integrity of the interactions with the case study children, whose behavior was sometimes influenced by the presence of a recoding device.

Appropriation increases with congruence of values in activity settings. It seems, then, that a fruitful line of investigation would be to closely examine pockets of transitional activity and appropriation for insight into circumstances that promote alignment of object-motives. Fundamental in all this is the role of the subject and the complex interplay between subject and setting. Grossman et al. (1999), advised, "Through the process of appropriation, learners reconstruct the knowledge they are internalizing, thus transforming both their conception of the knowledge and, in turn, that knowledge as it is construed and used by others" (p. 15). The following comment from Shannon illustrates the potential of the dialectic between subject and setting:

> We didn't know about wikis! We didn't know about blogging! We didn't know about getting online and talking to people! But now we – all these teachers out in the county – did that and now know how to do that. That's

> going to be a big deal for our county, you know, just in our attitudes at school….I think we are going to see things happen in our county just from taking the online course with you guys, that, you know, maybe benefits that you haven't even thought about down the road for us, not necessarily for you, but for us kind of thing. (interactive interview, February 6, 2013)

In keeping with her self-concept and orientation as learner, Shannon credited her coursework experiences and the influences of her instructors for showing her the potential of new literacies tools to improve her practice both as a reading specialist in the classroom and as a district-wide professional development leader. She said, "We're being accused of not having these kids ready for college or career. And it's true, especially in the technology area, because they're not getting exposed to how these things can work and help them." For instance, despite district policy forbidding teacher and student use of cell phones during the school day, Shannon began strategically integrating her mobile phone into her work as a reading specialist, using apps for audio recording students and for creating running records: "I can just use this [cell phone] for all kinds of things, and I never would have [before]."

Shannon predicted that the cohort's encounters with new literacies in REED 537/539 would send a "ripple effect" through Browne County Schools. Roth (2004) referred to such outcomes in his description of "inherently dialectic" social processes: "The educationally interesting aspect of this is that the individual not only produces outcomes, which are distributed, exchanged, and consumed, but also, in the same process, produces and re-produces him- or herself as a member of the community" (p. 4). Shannon

described a vastly different course experience than did Grace because Shannon's goals, histories, and activities more closely aligned with those of the REED 537/539 course design.

And yet, even in situations where a congruence of values was less evident, as with Grace, interesting developmental possibilities unveiled themselves through the process of interactive interviewing. Grace, who expressed a preference for mastering digital tools before implementing them in the classroom, came around to the realization that a mastery approach may not be possible in online environments where both instructor and students are immersed in technology:

> **Grace:** …because I don't have to do an online environment. I don't have to do that because they're [the students] there, and if something goes wrong with my technology, then I skip it and move on.
>
> **Jennifer:** OK. And there is, there is a difference –
>
> **Grace:** – there's a difference –
>
> **Jenifer:** between face-to-face and –
>
> **Grace:** Yeah.

Moreover, Grace offered compelling insights into the impact of video recording instructional practice:

> **Grace:**....[W]hen you turn a video camera on, people are always aware, especially the people who turn it on. They're aware that it's there. And so you try, you have to, you make that conscious effort to say and do the right thing, so, "Oh, I can catch this on video, and I will have the clip here, if I will say the right thing. If she says this today, then I will say the right thing." And then the student never says what you think they'll say. You know? But, I can also remember, while sitting with a student, um, when she would do something, and I would talk about that, and as she would begin to read again, I would think, "That's a pretty good teaching moment

> right there. I'm gonna have to try to find that again." I can remember thinking it.
>
> **Jennifer:** right
>
> **Grace:** You know, as I was sitting there....So, instead of teaching and paying attention to her, I'm thinking, "That's a pretty good clip." And I'm writing notes about where to find the video clip.
>
> **Jennifer:** Yeah, you're making a note about where to find that video clip, but you're also reflecting in practice. As it's happening, you're noticing what went well, and you're noticing what went wrong. Clip or no clip, you're noticing, which –
>
> **Grace:** Which, I do that, I do that—
>
> **Jennifer:** – some teachers do not do.

Video stimulates reflection-in-practice even as it threatens to turn practice into performance. This insight would not have been possible were it not for the interactive interview process, which added a new dimension to the social context of REED 537/539 and which suggests a major implication of this study. By giving an enhanced role to dialogue, it is possible to locate and elevate the "deeply communal motives" (Engeström, 2000, p. 964) within activity settings.

Implications

A major implication of this study is a model of PD that helps participants become "thoughtfully adaptive" (Duffy, 1998; Fairbanks et al., 2010)as they confront systemic tensions within the growing field of blended teaching and learning. A secondary, but no less interesting, implication is the role CHAT can play toward that end. The work of Grossman et al. (1999) and Smagorinsky et al. (2004), which demonstrated how CHAT informs settings that foster teachers' early career development, proved invaluable for my

own interpretations of REED 537/539 as an activity setting that fosters inservice teacher development. Few studies of this nature exist, possibly owing to the “notoriously difficult” school cultures in which practicing teachers work. Edwards (2008) wrote, "Throwing some light on how school systems may shift through working with researchers and how individual practitioners might learn to engage in alternative pedagogic practices is therefore a timely quest" (p. 376). Before I take up the theory-to-praxis feedback loop of CHAT, I will describe three implications connected to the primary contradictions of objects, tools, and subjects.

Coordinate Objects

Grossman et al. (2004) asserted that “the opportunity to experience a pedagogic tool in the social setting of teacher education may also affect appropriation" (p. 20). Similar opportunities should be purposefully interwoven into the social contexts of professional development for inservice teachers. When introducing new tools, practices, and processes, it is necessary to share explicit descriptions of the conceptual underpinnings that support the integration of these tools into pre-existing and dominant activities of classroom teachers. Echoing Engeström's (2000) notion of the "deeply communal motive" for why we do what we do (p. 964), Grossman et al. (1999) contend,

> Cultures are infused with notions of ideal personal and societal futures that are promoted through the ways in which cultural activity is structured. A central concern of activity theory is to understand the kinds of culturally defined futures that motivate people's activity and the sorts of tools they develop in order to help mediate one another's progress toward those futures. (p. 5)

New tools, conceptual as well as practical, should be modeled by authoritative others in ways that align with "the conception of teaching being espoused" (pp. 19-20).

In the REED 537/539 pilot no such coordination was achieved with regard to the purpose and motive behind self-videoing the case study fieldwork. Participants expressed conflicting ideas about the purpose of video. Many approached video as nothing more than an artifact of accountability between them and the university instructors. Some used video with the misguided notion of analyzing *the child's* reading performance. Fewer still considered video as a window for looking in on their *own* pedagogical performance.

Only when the object of PD is coordinated, can we realize Harris' (2008) "process of persuasion" (p. 267), in which the teacher-learner-as-subject willingly engages with new literacies tools. As argued elsewhere in this study, experienced teachers are often a more receptive audience to new literacies PD than their novice counterparts due to the fact they already have a knowledgebase with which to confront and examine the inherently dilemmatic properties of today's digital tools. However, schools as workplaces are powerful influences on teacher identity, so practicing teachers also bring a host of values regarding new literacies framed by their workplace identity. A better alignment of object-motive between professional development and K-12 settings can ensure the "tipping point" factor toward new thinking about new literacies (Hughes and Scharber, 2008, p. 101).

Acknowledge and Embrace Variability in Tools

The REED 537/539 participants were resourceful, and the resources they used varied tremendously. Through processes of accommodating and appropriating tools and

practices, some participants successfully managed the videoing task per the rules of the activity setting. If objects are clearly coordinated and articulated, then the means of attaining them do not have to be so strictly formulated, as in Fall 2012 when platform, video clips, and rubric were rigidly prescribed. An open acknowledgement of the primary contradiction of 21st century digital ICTs – that they are infinitely variable and unpredictable – shifts the focus of conversation from one that is tool-centric to one that is process-oriented (McLoughlin, 2010; McLoughlin & Lee, 2009; Smith & Byrum, 2013) As institutions of higher education face mounting pressure to align curriculum and pedagogy with online systems of delivery, they can maximize the potential of new tools to support learning "by capitalizing on the competencies and skills students already possess" (McLoughlin & Lee, 2009, p. 643). For example, Smith and Byrum (2013) adapted the "BYOD" (bring-your-own-device) model for a graduate-level teacher education course in video production. As they engaged inservice teachers in video production using the teachers' preferred tools and platforms, the researchers discovered that "moving beyond device and software specificity allows learners to embrace what is accessible and capitalize on ways in which accessibility can turn into production" (p. 1740). Smith and Byrum promoted thoughtful adaptation by encouraging their graduate students to think outside the box and troubleshoot their own video solutions. Most importantly, the inservice teachers "were able to model similar activities for their own students to provide engaging learning experiences within their own classrooms" (p. 1744).

Engage in "Boundary Crossing" with Subjects

A final recommendation is for the enhanced role of dialogue to honor and respect "individual characteristics of the learner." There is an opportunity for that here. At the very least, teachers, school district supervisors, PD coordinators, and university-level instructors need to discuss the expectations and desired outcomes for goal-directed activity in blended learning. Beyond a minimal acknowledgement of the joint activity, they might discuss "what the joint professional development activity is and how the activity affects the individual teacher activity and institution school/university activities" (Yamagata-Lynch & Haudenschild, 2009, p. 516).

Even better, as the blended learning model is implemented, instructors and students can meet for "boundary crossing" (Roth & Lee, 2007) interviews, akin to Engeström's (2000) "knotworking" concept, Coburn's (2001) "collective sensemaking" model, and Roth and Tobin's (2004) "co-generative dialogues." Through these conversations, it is possible to improve mutual understanding of participants' goals and expectations for teaching as well as their knowledge and beliefs about how and what to teach (content), all of which make a profound impact on the PD experience. Sannino (2008) wrote of a "metacognitive level of intervention" (p. 337), which is a more deliberate and intentional effort to engage participants in discussion of contradictions and tensions. She wrote, "In future interventions, conflicts and transitional actions may be collected, reflected upon, and developed within a specially organized second layer of the intervention" (p. 337). These conversations provide time to reflect and "work on emerging conflicts and potential hybrids" (p. 337). The interactive interview procedure

that I used during this study, for example, could be more intentionally deployed to generate ideas about and solutions for conflicts and tensions as they arise during future hybridized or blended learning courses.

Leverage CHAT's Theory-to-Praxis Feedback Loop

CHAT functions on a basic premise that when elements within a system are out of alignment – and they frequently are – the resulting conflict drives action. Roth (2004) wrote, "As in any dialectical unit, there is an action-precipitating tension between the nonidentical elements of the unit..." (p. 3). When the researcher-practitioner applies a CHAT perspective in collaboration with participants, he or she can identify "sideways or horizontal moves" to improve the overall learner experience (Edwards, 2008, p. 378). In their study of a student teacher's identity work within nested activity settings, Smagorinsky et al. (2004) wrote, "We see such tensions – those that require a socially contextualized intellectual resolution rather than simply one of relational accommodation – as potentially productive in creating environments conductive to the formation of a satisfying teaching identity" (pp. 22-23). CHAT trains the researcher-practitioner's focus on productive tensions and encourages a long view of changing activity, not just changing actions (Edwards, 2008; Engeström, 2008; Roth & Lee, 2007; Roth et al., 2004; Sannino, 2008). Sannino's concept of transitional actions, for instance, thrives not on step-wise, linear progression, but instead assumes "discontinuity as an intrinsic feature of transitions" (p. 332). Sannino explained, "Sustainability in this light may be reconceptualized as a process which involves transitional actions and in which dominant and non-dominant activities begin to merge and hybridize" (p. 337).

Ideas for Future Inquiry

I never set out to study teacher use of digital video, and I did not design this study in anticipation of the "action precipitating tension" (Roth, 2004, p. 3) that video brought to the blended learning community of REED 537/539. As a new literacies learner, I have practiced my own version of task avoidance with regard to audio and video production, long wary of its infinitely variable properties. I have gradually come to terms with the idea of video as a fascinating new literacies tool for disrupting thinking and generating the kinds of productive tensions that Engeström (2000) and Barab et al. (2004a) say are part and parcel of the learning process. This suggests, for me, a future inquiry designed around video as a skill area/new literacy for teachers. For example, how could digital video clips be used to improve teacher-learner practice around a specific domain of literacy instruction, such as word study or writing?

Further, this study has made me particularly sensitive to terms such as "technology savvy" and "transformation," which are imbued with tacit meanings and cultural values and, thus, demand scrutiny. I would especially like to problematize the use of the terms "technology savvy" and "expert" in teacher education, building on the work of Pierson (2001) and Chandler-Olcott and Mahar (2003). During my study, when teacher-learners used the word "savvy" (as in, "I'm not technology savvy"), I would ask them to explain what they meant, and for these participants, at least, savvy is a natural-born trait that cannot be learned. What are the implications when members of a predominantly female profession regularly exchange in this expression? In their study of adolescent girls' new literacies identities as constructed within communities of practice,

Chandler-Olcott and Mahar cite the influential *Tech-Savvy* study commissioned by the American Association of University Women (AAUW), which suggested that one aspect of "savvy" is the ability to continually adapt and learn. I would like to compare the AAUW definition with teacher-learner definitions and examine teacher-learner articulations about savvy. How do they reflect identity, and how does all this relate to the teacher-learners' activity settings?

Conclusion

At one time, the purpose of this study was to understand the developmental path teacher-learners follow between novice and expert use of digital ICTs. That is, I wanted to understand how teachers reach a level of tolerance for and sustained engagement with the dilemmatic aspects of today's digital tools. Specifically, I wanted to articulate and theorize teacher learning in relation to New Literacies, and I wanted to link ideas of multiple realities, resistance, bricolage, and identity to this process. Koehler and Mishra (2008) and many others describe teaching as a complex and ill-structured professional domain. This notion is practically a truism across the literature. Does it even bear repeating? Well, it does, as long as policymakers, PD providers, and textbook publishers continue to deny teachers expert status.

On the other hand, if and when education stakeholders come to terms with multiple realities (Labbo & Reinking, 1999) of classrooms, teacher expertise is foregrounded. The multiple realities view of education elevates the professional discernment of teachers to the same level of respect given doctors, lawyers, analysts, and other high-paid decision-makers. A professional domain can be paradoxically highly

structured and poorly structured, according to Koehler and Mishra (2008), and this point is likely lost on new members or novices, who lean heavily on structure at first. Koehler and Mishra discuss the example of engineering, which is a structured and rule-oriented field until it meets up with real-world practice, such as building a bridge. Every bridgebuilding endeavor is different based on the budget, materials, and location. The novice approaches his or her field hoping to "master" the rules, patterns, and formulas prescribed for expert performance but then must learn to break or bend the rules. This is uncomfortable territory in which the seeds of resistance are sown.

In contrast, experts expect complications and complexity. An expert possesses the skill, procedural knowledge, and disposition to deal with unexpected glitches, abnormalities, and anomalies – and to deal with them almost happily as part of "what makes this work exciting" or "what makes this job worthwhile" or, even, "what makes this job so fun." Experts happily dwell in the ambiguities and can overcome "functional fixedness" that impedes creativity and innovation with technology. "Overcoming this is essential for the intelligent and creative application of technology for learning" (Koehler & Mishra, 2008, p. 6). I would say that, in general, functional fixedness in relation to pedagogy and content is a major obstacle to expert teaching. Many in the literature evoke the image of "teacher-as-bricoleur," and Koehler and Mishra are no exception. "Teachers construct curricula through an organic process of iterative design and refinement, negotiating among existing constraints, to create contingent conditions for learning" (p. 21).

Yet, as researchers investigate the new literacies as a component of teacher education and professional development (Atkinson & Swaggerty, 2011; Cervetti et al., 2006; Hughes & Scharber, 2008; Karchmer, 2001; Kereluik et al., 2011; Kist, 2004; Leu et al., 2004; Marsh, 2001; Spires et al., 2009), many stakeholders resist ICTs as disruptive to traditional learning processes and roles. Therefore, it is not surprising when teacher-learners, such as participants in the REED 537/539 case study, resist less stable modes of learning. In this era of high-stakes accountability that links teacher performance directly to achievement test results, teacher-learners, feeling a sense of urgency toward their professional development, may understandably view digital technology and its many "glitches" as just one more obstacle. "…[W]e had our own stuff that we were trying to learn," as one REED 537/539 student expressed it (Elizabeth, interactive interview, Jan. 12, 2013).

This is the "wicked problem" truism realized (Rittell & Webber, 1973). In their essay, "Dilemmas in a General Theory of Planning," Rittell and Webber describe the impact of pluralism and postmodernism on skilled professionals (teachers, academics, policymakers, city planners, and so on). Societal challenges once deemed simple, e.g. the formulation of school curricula, had evolved such that "professionalized cognitive and occupational styles that were refined in the first half of the century" were no longer adequate for addressing them (p. 156). I first encountered the concept of "wicked problems" in the instructional technology literature, in which researchers refer to the wicked problem of teaching with digital tools. Teaching and, by extension, teacher PD are already complex activities, made more unpredictable by pressure to integrate

continually evolving and "protean" technologies (Koehler & Mishra, 2008). Moreover, the recent influx of digital and mobile technologies into society arrived on the heels of another sweeping societal trend: the school reform movement and its demands for domain mastery and content area expertise.

The convergence of these trends imposes a significant dilemma for teachers. One begs for structure, accountability, and standardization of practice; the other requires "flexible and integrated bases of knowledge" (Koehler & Mishra, 2008, p. 3). One defines expertise as a matter of curriculum implementation; the other views expertise as a matter of design, teacher as both designer *and* student of the curriculum. Wicked problems are ill-defined and require an entirely new orientation to work/job performance, goal formulation, and one's own self-understanding as a competent expert. The literature documents many ways to promote TPACK through “inquiry learning projects” (Spires et al., 2009, p. 11) and “content-rich technology learning experiences” (Hughes & Scharber, 2008) and so on. But can it be assumed that this cognitive development consolidates with attendant change in the teacher’s affective state to such an extent that a new expertise emerges, an expertise so potent as to foment widespread, sustainable paradigm shift in K-12 teaching and learning? These processes may not be well understood, but new literacies as “boundary experience” makes for an exciting research agenda. "This is partly because the classical paradigm of science and engineering – the paradigm that has underlain modern professionalism – is not applicable to the problems of open societal systems" (Rittell & Webber, p. 160).

However, this process is stymied by the primary contradictions of this study. The

conflating of achievement and learning perpetuates and gives life and new relevance to "first" mindsets (Lankshear & Knobel, 2007) and superficial levels of technology integration (Hutchison & Reinking, 2011), which serve institutional needs and purposes, not necessarily teacher-learner purposes and even less so, student purposes. In other words, the high-stakes accountability culture provides fertile ground in which the old teacher-centered mindsets and attitudes stay rooted. The germination of new mindsets doesn't stand a chance with so much "poison in the well."

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Appendix

Appendix A

Technology Goal-Ranking Pre-Survey

This semester, the REED 537 and 539 syllabi contain explicit course goals for learning about and through digital technologies.

What specific things to you hope to learn in this class with regards to technology? Please list three to five technology learning goals you hope to achieve in REED 537/539. Rank order your goals (1=your most important goal).

Technology Goal-Ranking Post-Survey

This semester, the REED 537 and 539 syllabi contained explicit course goals for learning about and through digital technologies, including a final, reflective essay in which you describe what you have learned.

What specific things do you hope to learn in the future with regards to technology? In the space provided, please list three to five technology learning goals you hope to achieve beyond REED 537/539. Rank order your goals (1=your most important technology learning goal).

Appendix B

INFORMED CONSENT STATEMENT

INTRODUCTION

You are invited to participate in a research study for the purpose of examining how online learning communities within the Reading Specialist course sequence affect participants' capacity for teaching and learning with 21st-century ICTs.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

As a participant in this study, you agree to grant access to the field researcher/investigator, Jennifer K. Lubke, for purposes of data collection. The data collection procedures will involve observation, notetaking, and audiotaping (for purposes of transcription and analysis). Observation periods will last for a minimum of 30 minutes, possibly longer depending on the activity being observed. The investigator will attend and observe regularly scheduled class meetings of REED 537 and REED 539 (both online and face-to-face) during the 2012-2013 academic year. With participants' consent, the investigator will audio record these meetings.

If you agree to participate in this study, you are agreeing to allow the investigator to audio record, transcribe, and analyze segments of class meetings. In addition, you are agreeing to allow the investigator to access and analyze written work (case studies, reflective essays, and blog posts) that you upload and submit to the class Web site (BlackBoard) in the normal order of events per the REED 537 and/or 539 syllabi.

Before recording commences in online or face-to-face sessions, you will be reminded of this project and your permission will be confirmed by investigator.

RISKS

The risks of this study are minimal; however, before the study commences, the investigator will present and discuss the contents contained within this document and provide a statement of confidentiality to all prospective participants. In addition, you will be assured that participation is voluntary and you may end participation at any time.

If you decline to participate, the investigator offers two options in how to proceed depending on your comfort level: 1) you can be recorded along with your peers, but your contributions to the conversations will be omitted from the transcription and analysis, or 2) the investigator will narrow the focus of the study to small groups discussions where consent is not an issue.

All electronic data generated in connection with this study will be stored on a password-protected computer belonging to the principal investigator. Once audio files are downloaded onto the password-protected computer, they will be deleted from the audio

recording device. Any printed materials will be stored in a locked office when not in the care of the investigator. In compliance with University policy, all data will be destroyed three years following the completion of the study.

BENEFITS

Participants in this study will receive no tangible benefits as a result of participating. The researcher has neither stated explicitly nor suggested implicitly that any financial, material, or symbolic gain will come as a result of participating. You are not required or expected to participate in this study, and participation or non-participation will in no way benefit or hurt you.

The project only benefits the larger academic community in which there is interest in how specific teachers in specific discipline areas develop proficiency in digital technologies for teaching and learning.

CONFIDENTIALITY

Your confidentiality and the confidentiality of anyone that you mention while being recorded is an especially important concern. Therefore, during transcription, pseudonyms will be used in place of all proper nouns referring to people, locations, and facilities, and an audio editing software called Audacity will be used to erase any references you make to people, locations, and facilities. By erasing references to sensitive names of people and places, the researcher may safely share segments of audio with colleagues during research team meetings and data sessions. However, as an additional precaution, a signed confidentiality statement will be required from all university collaborators who see, hear, or read the data.

Moreover, the investigator will take great care to use pseudonyms in reference to all people and places within every written draft, conversation, and presentation created in connection with this study. To keep the data secure, the digital recorder will remain with the investigator at all times or securely locked in an office anytime it contains recordings. Once the audio files are downloaded onto a password protected computer, they will be erased from the recorder. The password is only known to the principal investigator. Transcripts will be maintained in a securely locked office when not in the investigators' possession. In compliance with the University's policy, all data will be destroyed three years after completion of the study.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, please contact Jennifer K. Lubke at (865) 387-4250 or jlubke@utk.edu If you have questions about your rights as a participant, contact the Office of Research Compliance Officer at (865) 974-3466.

PARTICIPATION

Your participation in this study is completely voluntary. You may decline to participate without penalty, and you may withdraw participation at any time without penalty. If you withdraw from the study before data collection is completed, your data will be disregarded during analysis.

CONSENT

Please initial the line next to the statement that expresses your wishes and strike a line through the text that expresses the opposite:

I have read the above information and received a copy of this form.

_____ I agree to participate in this study.

I have read the above information and received a copy of this form.

_____ I do not agree to participate in this study.

Participant's Signature _____ Date _____

Investigator's signature _____ Date _____

Appendix C

Participant name/pseudonym_____ Date_____

Protocol for an Interactive Interview/Cogenerative Dialogue

Between Researcher and Teacher Participant(s)

Introduction [to be spoken by facilitator/investigator]:

Thank you for participating today. We are here to learn from each other about what happened during the Fall 2012 implementation of REED 537/539.

Online collaboration software and course management software (LIveOnline@UT and Online@UT) and digital video analysis were used to transform REED 537/539 from a face-to-face to a blended class. I would like your help in understanding the strengths and weaknesses of using these technologies. We are focusing on our experiences within the online learning community to learn how to improve future interactions and learning events within the online learning community.

This is a "no holds barred" discussion. That is the only way we are going to learn. I will be taping this session and taking notes so that I can study what you have said. Your full name and identity will not be attached to your comments. All proper nouns used in the discussion will be changed to pseudonyms.

Topical questions:

- *What are your years experience?*_____
- *Number of years with the county?*_____
- *What grades and subjects have you taught?* _____

_____

- *Describe your position this year* _____

_____

Lead-off question: What was this experience like for you?

Possible follow-up questions:

1. Regarding reading, posting, and responding to online course content, what was your participation like?
2. Describe how you and your classmates and/or instructor worked and interacted together.
3. What is the *most* important outcome of this activity/lesson/event? Can you summarize what happened? Perhaps a story about something that happened to you would help us understand what you mean.
4. Is there anything else you would like to tell us about your experience?

Appendix D

Dear Colleagues,

Happy New Year! I hope that the beginning of the spring semester has gone smoothly for you.

I have spoken already to a few of you about my interest in talking in-depth with you about your experiences in 537/539 last semester. The time has come for me to set up these interviews, and I am putting out an open invitation to all of you to participate, on a volunteer basis.

I hesitate to call this stage of my research an "interview." It will not be a Q&A session or a fill-in-the-blank questionnaire. It will be more of a dialogue or conversation between you and me, lasting about one hour as time permits. I would prefer a face-to-face meeting, and I will do everything in my power to accommodate your schedule. I will come to your location. Or, we can use Skype, Collaborate, or Facetime.

These conversations will be recorded, transcribed, and shared with you to ensure accuracy. Confidentiality will be preserved with the use of pseudonyms for all location names and individuals. (You may choose your own pseudonym!)

Please contact me if you are interested in continuing this research project with me. I have no incentives to offer you other than my deepest gratitude. Also, contact me with any questions or concerns you have about the interview process.

Thank you,

Jennifer Lubke

Appendix E

INFORMED CONSENT STATEMENT FOR INTERACTIVE INTERVIEWS

INTRODUCTION

You are invited to participate in a data collection event with UT-Knoxville graduate student Jennifer K. Lubke, who is examining how online learning communities within the Reading Specialist course sequence affect participants.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

As a participant in this study, you agree to participate in an interactive interview/discussion involving the researcher and other consenting participants from REED 537 and/or 539. These discussions will take a minimum of 30 minutes and will not exceed one hour. These discussions will be audio recorded (for purposes of transcription only). The entire research project will conclude in May 2013.

CONFIDENTIALITY

All information from this interactive interview will be kept confidential. Pseudonyms will be used in reference to all contexts, facilities, and individuals.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, please contact Jennifer K. Lubke at (865) 387-4250 or jlubke@utk.edu If you have questions about your rights as a participant, contact the Office of Research Compliance Officer at (865) 974-3466.

PARTICIPATION

Your participation in the interactive interview is completely voluntary. You may decline to participate without penalty, and you may withdraw participation at any time without penalty. If you withdraw from the interview/discussion before data collection is completed, your data will be disregarded during analysis.

CONSENT

Please initial the line next to the statement that expresses your wishes and strike a line through the text that expresses the opposite:

I have read the above information and received a copy of this form.

_____ I agree to participate in the interactive interview.

I have read the above information and received a copy of this form.

_____ I do not agree to participate in the interactive interview.

Participant's Signature _____ Date _____

Investigator's signature _____ Date _____

APPENDIX F

Code Map: Three Iterations of Analysis (to be read from the ground up)

Phase 3 Selective Codes	
Code	**Definition**
Primary Contradiction, Tension A	New literacies tools as inherently dilemmatic and contradictory, especially video and online video analysis
Primary Contradiction, Tension B	Shared objects resulting in stress, conflict, and multiple professional responsibilities and identities for teachers
Primary Contradiction, Tension C	Teacher-learners confront feelings of disequilibrium balancing student roles with teacher-expert roles
Secondary Contradiction, Tension	Teacher-learners quit or shelve digital video and self-reflection activities because the tools are too difficult
Tertiary Contradiction, Tension A	Changes in course format, structure, expectations, assessment, and feedback due to the pilot
Tertiary Contradiction, Tension B	Self-observation instrument misunderstood as a tool for external evaluation by instructor
Quaternary Contradiction, Tension	Multiple realities of technology implementation
Accommodation	Grudging acceptance or "deference to more powerful forces in the environment" (Smagorinsky et al., 2004)
Affordance	A positive description of a tool (real or conceptual) that enable a participant to do or learn something
Appropriation-innovation	Any description of the individual's experience of participation in an activity and how that process prepared the individual for future activity (Rogoff, 1995); aligns with Engeström's (2000) assertion about "innovative action" produced by activity (p. 966)
Constraint	Any limitation (positive or negative) that channels, supports, or provides structure for the use of a tool (real or conceptual) (Grossman et al., 2004)
Disequilibrium	Moments of "disjuncture" (Grossman et al., 1999) and "contradiction" (Koehler & Mishra, 2008; Roth, 2004) that open windows for learning and development
Object-motive	Purpose or goal-directed motive or problem upon which the subject-participant applies action and effort. This object may not be the same as the formal object.
Outcome	A consequence, intended or not, of a participant's effort or action
Self-conception	Participant articulation that reveals attitude, disposition, or self-understanding
Tool	Any reference to conceptual or practical tools used by the participant
Phase 2 Focused Codes	
Code	**Definition**
Challenges of video recording	References to process of video capture
Changing expectations or course requirements	References to changes related to course pilot
Defying conventional wisdom	The participants say or do things that challenge taken-for-granted notions
Face-to-face versus online	References that compare and contrast face-to-face to online coursework
Learning by design	Teacher technology professional development through hands-on learning (Mishra & Koehler, 2006)
Feedback loop	The participants say or do things that inform research practice or instructional practice
Not knowing how to assess/tutor	Not understanding the various IRIs, tutoring, word study, or other reading education practices
Not knowing how to reflect	Misunderstandings about self-observation for purpose of reflection
Not knowing how to use technology	Not understanding a digital tool required for the course
Reflecting on practice	Self-observation and reflection on classroom practice for purposes of improving, including but not limited to video analysis
Resistance	Participants reactions to disequilibrium
Struggling	References to doing difficult activities, whether personal, technological, work-related, or course related
Taken-for-grantedness	Assumptions or well-accepted ideas and values expressed by participants
Technology problem-solving	Descriptions of what teacher-learners did to fulfill technology requirements

Novice-to-expert spectrum		Participants say or do things revealing their role as teacher-learner	
Wearing two hats		Tension in the role of teacher-learner	
Phase 1 Codes			
"a beast to slay" "a bit of poison in the well" "a reckoning" "a vicious cycle" "a whole new way of teaching" "a yucky program" being a Learning Leader being observed by an evaluator in situ being "placed in the student role" being "stuck in our ways" being willing "to go there" cognitive overload comparing Evirx rubric to TEAM evaluation comparing technology to classroom teaching "deer in the headlights" doing word study work "double-edged sword" "editing and evaluating myself twice" editing before upload embedding video into PowerPoint "everybody is learning" "every choice is an evaluation" feeling comfortable feeling guilty feeling "like a new teacher again"	feeling like drowning feeling uncomfortable feeling "the wear and tear" "fighting with the Evirx program" finishing "the last leg" getting help from someone else going over the self-observation rubric growing up with technology having a hard time recording child having responsibilities "I am the same person I am face-to-face" "I don't have time" "if we do it correctly" improving the Collaborate experience improving the Evirx experience "I'm not technology savvy" "looking deeply" "muddle through" "performing a duplication of effort" improving tutoring techniques "it all became clear" "it's a 'training type year'" "it's become a video editing class"	"it was sort of trial and error" "just a chain of stupid technology nonsense" "knowing everyone is having a hard time" lack of sociability lacking transparency "let go of the reins" "like does this really matter" liking Collaborate looking at each other's teaching making a digital clip library "mentally taxing" MovieMaker. multitasking in Collaborate "natural disposition" needing instructor feedback not editing video before upload not making video analysis a priority not wanting to buy stuff "no recipe" "one more thing to do" "piggybacking two courses" practicing technology before teaching with it presenting in Collaborate prioritizing time putting one's "true self out there"	realizing how older people feel reflecting back, in hindsight sharing video clips and analysis "so many avenues to get there" summer practicum experience "teachers are decision makers" "the hardest thing for me to do" "there wasn't any expert" uploading video is difficult using a desktop video editor using Evirx using the chat function in Collaborate using video for teacher evaluation video recording everything "want to exemplify something" watching exemplary videos watching self-recorded video "we are all teachers of something" "we had our own stuff that we were learning" webcam use in Collaborate "What's in it for me?" working with a group

APPENDIX G

Tutoring Self-Observation Instrument

Graduate Student:_____

Student/tutee (pseudonym):_____Age/Grade Level:____ Tutoring Plan/Log Date:_____
Clip Number (if more than one clip identified for this tutoring video) _____

Literacy Focus (as per Log): □Reading □Word Study □Writing

Directions
Under each Literacy Focus (as per log), check the yes/no responses; check a rubric score of 0, 1, or 2 for each indicator; and enter a comment in which you reflect on specific evidence observed for each indicator. You may have a single Literacy Focus for a clip, or multiple, depending on the length and topic of each clip.

Yes/No = self-explanatory
Rubric Score 0=not demonstrated/not present
1=partially demonstrated
2=adequately demonstrated

I. Aligned with Tutoring Plan/Log & Student's Responses

- □ 0=Instructional content unrelated to Log
- □ 1=Instructional content described in Log
- □ 2=Instructional content aligned and responsive

Evidence/comment:

II. Literacy Focus: Reading

Text/sound clear: □yes □no
Title/Level indicated: □yes □no

Appropriate instructional level text as per assessments (word recognition=90-95% accuracy; 75% comprehension) : □yes □no

Explicit literacy focus as per Log (e.g., developing a literal understanding of a passage/text; inferring central ideas of a passage/text; ascertaining word meaning;
automaticity in word recognition; decoding) : □yes □no

Explicit language that references the literacy focus

- □ 0
- □ 1
- □ 2

Evidence/comment:

Appropriate language scaffolds (modeling; prompting to notice)

□ 0
□ 1
□ 2

Evidence/comment:

Appropriate wait time

□ 0
□ 1
□ 2

Evidence/comment:

Explicit (versus general "good job") praise

□ 0
□ 1
□ 2

Evidence/comment:

Choice words to motivate (e.g., "you must be proud of yourself")

□ 0
□ 1
□ 2

Evidence/comment:

III. Literacy Focus: Word Study

Appropriate word study stage as per assessments: □yes □no

Explicit word study focus as per Log: □yes □no

Explicit language that references the patterns/sounds to be learned

□ 0
□ 1
□ 2

Evidence/comment:

Appropriate language and visual scaffolds (e.g., picture/word headers; word study notebook; modeling the use of notebook/headers/ so on as references for categories of patterns)

□ 0
□ 1
□ 2

Evidence/comment:

Appropriate wait time

□ 0
□ 1
□ 2

Evidence/comment:

Explicit praise

□ 0
□ 1
□ 2

Evidence/comment:

Choice words to sustain engagement/motivate

□ 0
□ 1
□ 2

Evidence/comment:

IV. Literacy Focus: Writing

Writing sample clear/included: □yes □no
Writing related to reading texts: □yes □no

Explicit literacy focus as per Log (e.g., dictated writing; writing in a particular genre; note taking in service of comprehension; sentence writing in service of word recognition; writing to express generalizations about spelling patterns or other aspects of word study; writing/drawing to reference concepts; so on): □yes □no

Explicit language and visual scaffolds (modeling; mentor texts; editing checklists; "words I use when I write")

□ 0
□ 1
□ 2

Evidence/comment:

Appropriate wait time for responses

- □ 0
- □ 1
- □ 2

Evidence/comment:

Explicit praise

- □ 0
- □ 1
- □ 2

Evidence/comment:

Choice words

- □ 0
- □ 1
- □ 2

Evidence/comment:

Vita

Jennifer K. Lubke was born in 1969 on Camp Kue Army Base in Okinawa, Japan, to Karl and Verne Koch. As the child of a U.S. military officer, Jennifer moved several times while growing up. In 1981 her family settled in San Antonio, Texas, and Jennifer was graduated from William Howard Taft High School in 1988. After high school, Jennifer attended the University of Texas, where she earned a BA in English with a minor in journalism in 1992. She performed one year of service with Volunteers in Service to America (VISTA) before beginning her career as a secondary English/Language Arts teacher at Rockport-Fulton High School in Rockport, Texas. She holds secondary certification in English education and has 11 years experience teaching in both Texas and Tennessee. Jennifer is a member of the first cohort of Urban Specialists at the University of Tennessee and earned the Urban Specialist certificate in 2003. After the birth of her son, Jennifer resumed her graduate education, completing a MS in Instructional Technology at the University of Tennessee in May 2008, one month before the birth of her second child, a daughter. In 2009 Jennifer applied and was admitted to the University of Tennessee's PhD program in Literacy Studies and Reading Education, within the Department of Theory and Practice in Teacher Education, College of Education, Health, and Human Services. Throughout her doctoral studies, Jennifer has maintained a strong teacher-researcher focus, earning both a K-12 Reading Specialist endorsement from the state of Tennessee and a Graduate Certificate in Qualitative Research Methods in Education from CEHHS at UT-Knoxville. Her research interests include web-based applications and online content sharing, virtual learning communities, media education, new literacies, adolescent literacy, and teacher professional development.