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Making Voices Visible: Teacher Research in a Community College Early Childhood Teacher Education Program

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MAKING VOICES VISIBLE: TEACHER RESEARCH IN A COMMUNITY COLLEGE EARLY CHILDHOOD TEACHER EDUCATION PROGRAM

A DISSERTATION

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Abstract

Teacher research has been included in university and graduate teacher education programs for the past 2 decades. Recently, associate degree programs have also begun to engage their students in teacher research. What happens when community college early childhood students conduct teacher research as a course assignment? This study involved 8 former community college early childhood education students who had recently completed teacher research projects as part of their coursework in 1 of 3 different courses. Data sources included students' written reports of teacher research, classroom field notes, photographs of student data, and interviews with each participant. The study was informed by theories of reflective thinking (Dewey, 1933), reflective practice (Schön, 1983, 1987), transformative learning (Cranton, 2006b; Mezirow, 2000), the voice-centered method (Brown & Gilligan, 1992), and narrative knowing and inquiry (Bruner, 1986; Clandinin & Connelly, 2000a). The study found that the teacher research projects enabled students to question their assumptions about children and teaching and benefitted both the college students and the children in their classrooms. Participants spoke in the voices of both learners and teachers, and their teacher voices were confident and committed to teaching children and caring for their well-being. Teacher research created a context in which these students demonstrated both voice and power, which they used on behalf of the young children in their classrooms. The findings of this study can contribute to the conversation about teacher research in community college early education programs, as well as inform teacher education and early childhood education research and practice.

Chapter 1: Introduction

> It was so . . . what's the word I am looking for? Enlightening? You know, when that little light bulb goes off? Oh! That's was it was; a big learning experience.
>
> —MT, Talking about teacher research

> We propose that teacher research, which we define as systematic, intentional inquiry, makes accessible some of the expertise of teachers and provides both university and school communities with unique perspectives on teaching and learning.
>
> —Marilyn Cochran-Smith and Susan L. Lytle, *Inside/Outside*

It isn't often that we are fortunate enough to encounter an idea or experience that strongly impacts our practice as teacher educators. Three years ago I discovered teacher research and I have been using it in my practice as an early childhood associate degree professor ever since. I immediately sensed that *this* is the answer to the question that I suspect worries all teacher educators: How can I possibly teach my students everything they will need to know when they get into the classroom with children?

This study explores what happens when early childhood community college students conduct teacher research as a course assignment. The purpose of this dissertation research is to inform the practice of teacher research in early childhood teacher education, specifically in the context of associate degree early childhood programs.

The research involved a purposeful sample of eight participants who were all former students in a small, rural, state-funded community college in the northeastern United States. Each participant completed a teacher research assignment in an early childhood course within the past 9 months. Four data sources were used for each student. These included one semistructured

interview with each participant, the students' written teacher research reports, researcher field notes, and researcher photographs of students' teacher research data taken during the course in which the teacher research was assigned.

This dissertation is comprised of five chapters. Chapter 1 is the introduction and overview of the study, background, context, and definitions of terms. Chapter 2 is the review of the teacher research literature and its theoretical foundations based on the work of John Dewey and Donald Schön. Chapter 3 describes the study design, research methods, data collection and data analysis. Chapter 4 presents the findings of the study, including many of the participants' own words, in the format of a profile of each project as well as the emerging themes and answers to my research questions. Chapter 5 includes the discussion of findings through the lenses of voice and power in women's learning, as well as conclusions and implications for early childhood teacher education research and practice.

This chapter begins with an overview of the broad context of teacher education in the current climate of accountability and change, the more specific contexts of community college early childhood teacher education, as well as the field of early childhood education. This is followed by a discussion of the problem of preparing teachers for the complexities of teaching, the statement of purpose, and the research question. The chapter also discusses the researcher's education and experience related to early childhood education, teacher education, and teacher research, as well as the researcher's assumptions going into the study. The research approach, as well as the rationale and significance of the study are also discussed. In addition, key terms such as teacher research, early childhood education, and documentation are defined.

Background and Context

Teacher education. Teacher education faces many challenges in the current political and economic climate (Cochran-Smith, 2004a; Cochran-Smith & Lytle, 2009; Darling-Hammond, 2006; Darling-Hammond & Bransford, 2005a; Falk, 2012), and friend and foe alike are calling for rethinking what it means to prepare teachers to work in today's classrooms (Borko, Liston, & Whitcomb, 2006; Darling-Hammond & Bransford, 2005b; Fosnot, 2005; Grant & Gillette, 2006; Ken Zeichner, 2010). Whereas federal policies such as No Child Left Behind (2002) mandate strictly controlled measures of practice and accountability, teacher educators and friends of children persistently advocate for equity, social justice, and teaching philosophies that reflect child-centered, family-friendly approaches (Cochran-Smith, 2004b; Cochran-Smith et al., 2009; Darling-Hammond, 2010; Lutton, 2012; Kenneth Zeichner, 2009). Underlying the debate is nothing less than what it means to be a teacher. Are teachers technicians and consumers of scientific research who must be constantly monitored and assessed, or are they intelligent, reflective practitioners who know how to improve the lives of the children in their classrooms? Is teaching simply a matter of controlling children and filling them with predetermined facts, reducible to a set of "teacher-proof" scripts, or is teaching a complex, intuitive, nuanced process that requires thinking, knowledgeable teachers? Our answers to these questions impact how we define teacher education. If we believe, as I do, that teaching is complex and that teachers have the capacity to generate knowledge, our programs must provide opportunities for students to develop these capabilities.

Another significant issue in teacher education is how preservice teacher education students' prior experiences impact their beliefs about teaching and learning and the effect this has on teacher education (Darling-Hammond, 2006; Dome et al., 2005; Fosnot, 2005; Olsen,

2008; Rust, 2010). These teacher educators often cite Lortie's (2002) notion of "apprenticeship of observation," which all students in higher education have experienced for at least 12 years before they attend college. Teacher educators should take into account that preservice teachers bring with them well-formed assumptions and beliefs about schools, teachers, teaching, and learning, developed during these previous life experiences as students and learners. Do they view teachers as passive consumers of knowledge or as practitioners with expertise capable of generating knowledge? The identities and mental models that preservice teachers bring to teacher education programs should be made explicit and understood before new teacher identities can emerge (Rust, 2010), because students' prior knowledge and experiences influence what they accept and what they reject from their teacher education programs. When the program resonates with their current beliefs, they are more likely to identify with it (Olsen, 2008). In order to address this issue, teacher educators should employ strategies that enable students to question their assumptions and beliefs and, in a sense, reconstruct what they know about teaching and learning. Teacher educators are always thinking about what to teach and how to teach it, and many have written about the extent to which teacher education is or is not effective in impacting student thinking about teaching (Darling-Hammond, 2006; Rust, 2010). Early childhood community college programs represent a subset of teacher education and are also significantly impacted by these overarching issues.

Early childhood community college programs. There are more than 700 associate degree programs in early childhood education in the United States (Early & Winton, 2001). Associate degree programs and community colleges have become increasingly important to the field of early childhood education as it becomes committed to developing a more ethnically and culturally diverse workforce to reflect the diversity of children and families in early childhood

programs (Lutton, 2012). Community colleges are more likely to enroll students of diverse ethnicities (Miller, Pope, & Steinmann, 2005). The community college mission is to increase access to higher education by addressing common barriers posed by 4-year institutions, such as cost, location, and scheduling. Community college students are more likely to include students with extensive family and work obligations, who attend part-time, and who require developmental course work (Caporrimo, 2008; Kim, Sax, Lee, & Hagedorn, 2010; Miller, Pope, & Steinmann, 2006; Porchea, Allen, Robbins, & Phelps, 2010). Community colleges also offer student supports in English as a second language and developmental college preparation courses in reading, writing, and mathematics (Lutton, 2012). Early childhood students in community colleges are also very likely to be employed in community child care settings and Head Start programs while they attend school. The students in my program fit this profile. The majority are required by the college to take at least one developmental education course, with most having to take two or more. In addition, due to state and federal mandates requiring early childhood staff to have a college degree, approximately seven out of 10 of my students are already working in the field and attending college part-time.

The National Association for the Education of Young Children (NAEYC) is the accrediting agency for many early childhood higher education programs, including Early Childhood Associate Degree Accreditation (ECADA), which began in 2006. This accreditation is based on the NAEYC standards and guidelines for professional preparation (Lutton, 2012): promoting child development and learning; building family and community relationships; observing, documenting, and assessing to support children and families; using developmentally effective approaches to connect with children and families; using content knowledge to build meaningful curriculum; and becoming a professional. These standards are unequivocal in their

advocacy for young children and their families and are based upon decades of continuous research in the field of early childhood education. There are currently over 150 accredited associate degree programs in the ECADA system (NAEYC, 2012). The college where this study was conducted became the first nationally accredited associate degree in early childhood education in the northeast United States in 2007, and all learning opportunities and assessments in the early childhood program are aligned with the six professional development standards cited above.

The field of early childhood education. The NAEYC defines early childhood as birth through age 8 (Lutton, 2012), including programs and schools for infants, toddlers, preschool, and early elementary grades in group and family settings, both public and private. State regulations vary, and many staff in early childhood settings are not required to have a college degree, however they are still called teachers. There has been a dramatic increase in the care of children outside of the home over the past 40 years; 70% of children between the ages of birth through 5 participate in some form of child care (U.S. Census Bureau, 2010). Due to this increased demand, the early childhood field, with over 1.2 million jobs in 2010, is expected to grow at the rate of 20% between 2010 and 2020 (U.S. Bureau of Labor Statistics, 2012), making it one of the fastest growing job categories in the country. An additional complicating factor is that almost 26% of children under the age of five in the United States are classified as poor (Children's Defense Fund, 2012).

Teacher research. There are many definitions and approaches to teacher research, also called practitioner research, practitioner inquiry, and action research (Cochran-Smith & Lytle, 1993, 2009; Herr & Anderson, 2005; Stremmel, 2007, 2012). This study uses the term teacher research as defined by the National Association for the Education of Young Children (NAEYC).

Teacher research in early childhood education involves a systematic and sustained study of some aspect of teaching and learning with young children and their families (Perry, Henderson, & Meier, 2012). Teacher research studies are grounded in the daily lives of children and based on the insights of the teachers or caregivers who work with them. Although there have been many studies about teacher research with both university preservice teachers (Auger & Wideman, 2000; Ax, Ponte, & Brouwer, 2008; Price, 2001; Subramaniam, 2010; Trent, 2010) and in-service teachers (Baumann & Duffy, 2001; Goodnough, 2010, 2011; Meyers & Rust, 2003; Rust & Meyers, 2006) in elementary and secondary education, there is significantly less literature addressing teacher research in early childhood programs, and no teacher research literature in the context of community college teacher preparation programs.

Documentation is a form of teacher research involving the systematic collection, interpretation, and sharing of photographs, artifacts, observations, and other evidence emerging from children's learning (Edwards, Gandini, & Forman, 1998; Given et al., 2010). The use of photographic documentation in early childhood programs in the United States has increased significantly in the past 2 decades owing to the growing influence of the Reggio Emilia approach to early childhood education (Edwards et al., 1998; Moran & Tegano, 2005; Wien, Guyevskey, & Berdoussis, 2011). Documentation gives teachers the opportunity to revisit, reflect on, and learn from their practice, making both learning and teaching visible (Project Zero, 2003). Falk and Darling-Hammond (2010) describe four ways that documentation scaffolds a more democratic stance in education by fostering an inquiry approach, supporting learning from teaching, extending learning, and providing for a method of authentic assessment.

Although just a sample of some of the issues and influences, this overview of contexts hints at the complexity involved in the practice of teaching and teacher education.

Overview of the Study

Problem statement. Many teacher educators have written about the complexity of teaching and how it influences their thinking about teacher preparation (Auger & Wideman, 2000; Cochran-Smith & Lytle, 2009; Darling-Hammond, 2006; Darling-Hammond & Bransford, 2005a; Katz, 2012; Lytle, 2012; Perry, Paley, et al., 2012; Stremmel, 2012). How can teacher education programs effectively prepare students to teach in a complex world where issues such as poverty, diversity, accountability, and changing technology impact the contexts in which teachers practice? Teacher research has been advanced as one important component of the preparation of effective teachers who can meet the challenges of complex teaching through inquiry and reflective practice.

Statement of purpose and research question. The purpose of this study is to inform the literature and practice of teacher research in teacher education and early childhood education, as well as to contribute to the discussion about teacher research in community college early childhood programs. This study addresses the following question*: What happens when community college early childhood students conduct teacher research as a course assignment?* There are also three secondary questions: *What stands out about teacher research for these students? What challenges do they encounter doing teacher research? What do they think about teacher research?*

Research approach. This qualitative research study reflects a constructivist approach (Mertens, 2009) that seeks to include participant voices and multiple data sources. I have a relationship with the participants in as much as I was their professor for two to three courses, including the course in which the teacher research was conducted. I consider the participants in the program to comprise a community of practice (Wenger, 1998) where all members, including

the professor, are constructing knowledge about the practice of teaching children together. I also consider my relationship with my current and former students to be authentic (Cranton, 2006a), characterized by mutual respect and reciprocity, and based upon a shared concern for the well-being of young children.

The eight study participants completed their teacher research projects in a variety of early childhood settings, including Head Start, family child care, and private group child care. All settings were full-day except one half-day preschool. Children involved in the teacher research projects were preschool age, which in this state is 2.9 to 5 years old. Although all participants were completing field hours for an early childhood course, six were also employees of the centers in which they completed their teacher research.

This study used four sources of data which include: a 1-hour face-to-face interview with each participant, each participant's written teacher research report, field notes from the classes where the teacher research was discussed and presented, and photographs of the participant's data and presentation displays. I recorded and transcribed the interviews. A variety of data analysis methods were used, including the voice-centered method (Brown & Gilligan, 1992), narrative inquiry methods (Clandinin & Connelly, 2000a), and qualitative content analysis (Ball & Smith, 1992).

An important consideration in this type of study is the extent to which it is trustworthy, including its credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). This study utilized methods triangulation, researcher reflection and transparency, peer debriefing, and member-checking of findings to address these issues, as well as thick description (Geertz, 1977), so that readers can determine the extent to which the study is applicable to their own context and practice. A limitation of the study is the small sample-size; however I aimed for

in-depth data rather than large numbers. In addition, I have a clear bias that teacher research is an important strategy in teacher education, so I have been diligent about being open to all data and acknowledging that bias. There was also the potential for an interviewer effect (Denscombe, 2010), because even former students might not want to give me what they would consider to be negative feedback about the teacher research project. All care was taken to adhere to ethical practice in every aspect of the study, and all participants had received their grades for their courses prior to the request that they participate in the study. Participation was voluntary and confidential, and all participants signed an informed consent document prior to beginning the study.

Researcher assumptions. I entered this study with several assumptions. First, community college early childhood students have the capacity and skills to conduct introductory teacher research projects. Second, these students benefit from implementing a teacher research project as a course assignment. Third, although there are some potential problems related to students doing teacher research as a course assignment, these are not significant or insurmountable barriers. Finally, I also assumed that what former students say about their experience doing teacher research would provide valuable data to inform my understanding of the teacher research assignments from their point of view.

The researcher. I am the early childhood education program coordinator and full-time professor at the small, rural, state-funded associate degree-granting institution of higher education in the northeastern United States that the study participants attended. I have a Bachelor of Science degree in Human Development and Early Childhood Education from the University of Massachusetts at Amherst (UMass), and a Master of Science in Early Childhood Education from Wheelock College. I have 38 years of direct experience in early childhood classrooms, first

as a preschool teacher, then teacher/director, then executive director of a small, private, half-day preschool program. I have 25 years' experience teaching in associate degree colleges, starting as a part-time instructor in three different 2-year colleges, then as full-time professor for the past 15 years at my current college. I have taught a wide variety of early childhood education courses from the introductory to advanced level, as well as supervising the practicum students in the field, visiting eight to 10 programs a month.

In 1991 I was introduced to the Italian Reggio Emilia approach to early childhood education when I read *Excellent Early Education: One City in Italy Has It* (New, 1990). I developed a passion to learn about Reggio Emilia. I studied Italian, visited the Hundred Languages of Children (Edwards et al., 1998) exhibit of children's work in three different locations, attended multiple Reggio-inspired conferences and conference sessions all over the country, read dozens of books and articles, watched documentary videos, studied hundreds of photographs, visited Reggio-inspired schools in the United States, tried out Reggio-inspired ideas in my own preschool, founded and facilitated a Reggio Emilia study group for 2 years. Most importantly, I visited Reggio Emilia on a study tour with 149 other teachers from the United States in 2002. The Reggio Emilia philosophy has greatly influenced my own practice with both children and adults, and has become a significant aspect of the program content as well. I created opportunities for student collaboration in all of my classes. I created an online photograph site for documenting my work with children and students at the college with hundreds of photographs. After using collaboration and documentation in my own practice for several years, taking the next step to teacher research came very easily.

I introduced teacher research into the early childhood program in 2009 after attending a meeting with the editor of the National Association for the Education of Young Children's

(NAEYC) online journal *Voices of Practitioners* (*Voices*) and I have been studying and conducting teacher research in my own practice in the 3 years since that meeting. I used teacher research to study the impact of assigning teacher research in the program, collecting student work samples, field notes, photographs of student teacher research data and presentations, and my own reflections. As early as the first semester of doing this I became convinced of the potential of teacher research as a key component of the early childhood program. The students asked meaningful questions. They collected useful data and developed convincing conclusions. Their presentations were engaging and informative. I continued to enhance and expand the teacher research component of the program, including it as an assignment in multiple courses over the next 2 years.

I have presented several sessions about teacher research in early childhood associate degree teacher education at national NAEYC conferences and institutes for the past 3 years, and in 2011, I was made a member of the steering committee for *Voices*. I am also the vice president of professional development for Access to Shared Knowledge and Practices: Associate Degree Teacher Educators (ACCESS), where I spearheaded an organization-wide exploration of teacher research, creating online platforms for posting work and discussions about teacher research with ACCESS colleagues. In 2012, I recruited three of my college's program graduates to form a teacher research collaborative group, and we have been meeting monthly as a teacher inquiry group, each member conducting her own teacher research.

It might also be interesting to note that 40 years ago I also attended the same community college in which I now teach and conducted this research before I transferred to the university to continue my education. I care about my students. I believe in them. I *was* them.

Rationale and Significance

This study grew out of the literature and the practice of teacher research in elementary and secondary education, as well as early childhood education. Teacher research in elementary and secondary education has been studied nationally and internationally for more than 2 decades in the context of university programs for preservice teachers and professional development for in-service teachers. Teacher research in early childhood teacher education emerged more recently. The benefits of teacher research for children and teachers have been well-described; however, the literature has not addressed teacher research in the context of community college teacher education programs.

This study can inform the discussion of knowledge and practice of teacher research in early childhood education. Community college teacher educators who have not used teacher research can find the rationale and suggestions for how to introduce teacher research into their programs. Similarities and differences between teacher research in community college and university programs can be explored. Because so many community college early childhood students also practice in the field while they attend school (Lutton, 2012), the study can also inform early childhood in-service teacher professional development.

Definitions of Key Terminology

The key terms in this dissertation are early childhood education, teacher research, documentation, and community college early childhood programs.

Early childhood education. The NAEYC defines early childhood as birth through age 8 (Lutton, 2012), including programs and schools for infants, toddlers, preschool, and early elementary grades in group and family settings, both public and private, including Head Start.

There were over 1.2 million jobs in early childhood education in 2010 (U.S. Bureau of Labor Statistics, 2012).

Teacher research. "Teacher research is intentional and systematic inquiry done by teachers with goals of gaining insights into teaching and learning, becoming more reflective practitioners, effecting changes in the classroom or school, and improving the lives of children," (Perry, Henderson, et al., 2012, p. 4).

Documentation. Documentation is "the collecting of information using observational notes, audiotapes and videotapes, photographs, and student work, to allow children and adults to reflect on, evaluate, and augment their previous work and ideas," (Project Zero, 2003, p. 17).

Community college early childhood programs. These are institutions of higher education that grant Associate of Arts (AA), Associate of Science (AS), or Applied Associate of Science (AAS) degrees in the study of children from birth through age 4 or older (Early & Winton, 2001). These are often called 2-year degree or associate degree programs, and I will use these terms interchangeably in the dissertation.

Summary

This study is situated within the context of teacher education and the theories, research, and practice of teacher research, with a focus on associate degree early childhood preservice and in-service teachers. The literature provides a solid foundation supporting the study. Chapter 2 includes a review of the literature involving teacher research and its theoretical foundations.

Chapter 2: Literature Review

This literature review is guided by several questions. What are the theoretical foundations of teacher research as it is currently practiced? What is the nature of teacher research, especially in early childhood education? What are the benefits associated with teacher research? What are the problems associated with teacher research?

Teacher research literature can be categorized in many different ways, and not all teacher research literature is relevant to this study of early childhood students in a community college setting. There is literature *about* teacher research, and literature *by* teacher researchers. Some of the literature is about preservice teachers in teacher education contexts, and some is about in-service teachers in professional development contexts. Another variation in the teacher research literature is the age-level of teaching, including early childhood, elementary, and secondary education. Topics often discussed in the literature are what teacher research is, how to do teacher research, what happens when teachers use teacher research, problems associated with doing teacher research, and benefits of teacher research for children and teachers, such as the collaborative nature of teacher research, voice, empowerment, identity development, and reflective practice. The major gap in the teacher research literature from the standpoint of this study is that there is no literature about teacher research in the community college context.

This review will consider important and often-cited general teacher research literature applicable to all contexts (Cochran-Smith & Lytle, 1993, 1998, 2009; Hubbard & Power, 2003; Levin & Merritt, 2006) as well as studies and discussions about teacher research (Baumann & Duffy, 2001; Christianakis, 2008; Gilbert & Smith, 2003). Although this study involves the preservice teacher experience, early childhood community college students often already work in the field while they attend school, therefore, the in-service teacher literature can also inform the

discussion as well. This review will also consider studies involving university preservice teachers (Auger & Wideman, 2000; Ax et al., 2008; Price, 2001; Subramaniam, 2010; Trent, 2010) as well as studies involving in-service teachers (Goodnough, 2010, 2011; Meyers & Rust, 2003; Rust & Meyers, 2006).

Most of the preservice and in-service teacher research literature involves elementary or secondary teachers, and not early childhood educators. An education database search on key words *teacher research* and *early childhood* resulted in an important list of references specific to the early education context. These are discussed separately from the literature not-specific to early education, and include literature about early childhood teacher research (Crawford & Cornett, 2000; Katz, 2012; Lytle, 2012; Meier & Henderson, 2007; Perry, Henderson, et al., 2012; Perry, Paley, et al., 2012; Rust, 2012; Stremmel, 2012) as well as literature in preservice teacher contexts (Hatch, 2012b; Hatch, Greer, & Bailey, 2006; Henderson, 2012b) and in-service teacher contexts (Cheyney, 2008; Goldhaber, 2010; Henderson, 2012a; Hobbs, Williams, & Sherwood, 2012), some of it by teacher researchers themselves (Espiritu, Meier, Villanza-Price, & Wong, 2002; Given et al., 2010; Mardell et al., 2012; Neimark, 2012; Spahn, 2012).

To understand teacher research and the teacher research literature, it is important to begin with the theoretical foundations of teacher research itself, specifically the writing of John Dewey and Donald Schön.

Theoretical Foundations of Teacher Research

Virtually all of the teacher research literature cites teacher educators Cochran-Smith and Lytle (1993, 1998, 2009), however when foundational theorists are cited, it is primarily the adult learning theories of Dewey (1933, 1938), and Schön (1983, 1987). Meier and Henderson (2007) trace the current tradition of teacher research in early childhood education directly to John

Dewey (1933), and his notion that systematic, reflective inquiry is an integral aspect of teaching practice. They also describe the influence of the work of Schön on reflection-in-action and reflection-on-action (Schön, 1983, 1987), another significant influence on the practice of teacher research.

John Dewey

In *Experience & Education* (Dewey, 1938), Dewey contrasts traditional and progressive education, but he cautions the reader to avoid what he terms an "either-or" mentality regarding the issue, and voices his contention that progressive education is not the wholesale rejection of traditional education's purposes and strategies. Progressive education must be grounded in a philosophy of experience, and Dewey outlines and discusses the criteria for true educational experience. He maintains that the most important aspect of the educational value of an experience is its impact on future learning. Dewey describes "continuity of experience" (p. 33), the process by which each educative experience influences the next. Education is a social process that flourishes when school is a community where each student has the opportunity to contribute and collaborate. In this type of classroom, the teacher is not a controller or an expounder, but a leader and facilitator of experiences and activities. At the heart of this is the very definition of what it means to be a teacher. Dewey's theory can be applied both to the content and the context of teacher education programs.

Dewey also has very specific ideas about what counts as thinking (1933), and he clearly defines different types of thought, including reflective thinking. It is what Dewey calls "reflective thought" (p. 2) that is the focus of teacher research and teacher practice. Reflective thought involves consecutive, connected thinking that enables us to create our own beliefs as opposed to unquestioningly adopting the beliefs of others. This is important because what we

believe impacts not only our beliefs, but our behaviors as well. In reflective thought, we arrive at our beliefs based upon the evidence we have considered, and this often occurs when we are confronted with a situation that confuses us or causes us to doubt what we already know. We are compelled to take action and search for evidence to make meaning of the experience. The inquiry that is part of reflective thinking cannot give us the answer, but it can suggest a course of action that can be tried and evaluated. This type of thinking allows us also to consider factors that are not immediately present, as well as those in the future. Dewey contends that this type of thinking must be trained and developed to be effective. Reflection involves thoughtfulness and deliberation, and can be described as a series of five steps that start with experiencing and then defining some sort of difficulty or problem. Possible solutions are generated, and then tried, observed, and evaluated. The solutions may or may not be accepted depending on the extent to which they solve the problem. This process is what enables us to make meaning of our experiences. Dewey describes this as combining what we know with what we do not know (p. 118). He also discusses the importance of specific attitudes that facilitate reflective thought, specifically open-mindedness, whole-heartedness, and responsibility. Open-mindedness is described as the willingness to consider more than one position or point of view. Whole-heartedness refers to giving your focused attention and enthusiasm to the topic at hand. Responsibility involves being aware of the outcomes of your actions and thinking. Dewey suggests that teachers strive to cultivate these attributes in their students. Interestingly, these habits of thought are also at the heart of inquiry-oriented teaching practice.

Related to reflective thinking is reflective practice. Another influence on teacher research and teacher research literature is Donald Schön.

Donald Schön

Schön (1983), in *The Reflective Practitioner,* developed a theory of reflection-in-action in contrast to the technical or scientific approach to the work of professionals within the professions, and described the outcomes and implications of reflective practice as well as a discussion of how reflective practice might impact the educational bureaucracy. In *Educating the Reflective Practitioner,* Schön (1987) revisits and deepens his discussion of the theory of reflection in action as artistry in professional practice in contrast to the more scientific technical rational approach. Knowing in action occurs when a competent practitioner uses the knowledge gained through practice to anticipate, frame, and solve problems encountered in the process of practice. This is not simple factual knowledge, but rather is fluid and is easy to demonstrate but difficult to describe. Knowing in action gives way to reflection in action when the practitioner encounters uncertainty, uniqueness, and conflicting values. Reflection in action comes into play when knowing in action does not work. The practitioner intentionally tests different solutions until one works to alleviate the problem. This is not a process of blind trial and error. As with Dewey, previous experience guides subsequent experiences and informs thinking. Reflection in action can lead to the development of new knowledge in action, as new solutions become part of the repertoire of the practitioner. Schön describes the process of educating the reflective practitioner within the practicum model. In the reflective practicum, the student begins to learn the principles of a particular practice including terminology, materials, and conventions by working with a more experienced practitioner, observing knowledge in action, and implementing reflection in action. The process of reflection in action and educating the reflective practitioner apply to teacher education as if it was made for it. Through this process, preservice teachers learn how to think and act "like a teacher," and they begin to think of themselves as teachers.

The New Scholarship Requires a New Epistemology (Schön, 1995) makes the case that an action-based approach to research is required in education systems that do not exclusively adhere to the technical-rational approach to research and education. He discusses the dilemma of rigor vs. relevance, and asks whether the professional practitioner should look to solve problems that are easily described and measured, but relatively unimportant to human concerns, or rather look to solve more important problems that are ill-defined and murky. Teachers, by nature, concern themselves with the second type of problem and use methods of inquiry that are considered less scientific than traditional research. Schön suggests that "uncertainty, complexity, uniqueness, and conflict" (p. 28) are becoming increasingly important in the generation of new knowledge. He calls for an "epistemology of practice" (p. 29), because we generate knowledge through our actions, to help bridge the gap between research and practice. Reflection in action occurs when a problem arises, a question is framed, an action is taken and evaluated, then adopted or discarded based on whether or not it improved the situation. Schön likens this process to Dewey's ideas about inquiry and action research. In this way, newly generated knowledge can be added to the practitioner's repertoire and carried over into new situations. He specifically states that "the practice of teaching must be seen as giving rise to new forms of knowledge" (p. 31). Universities should find ways to introduce action research as a valid strategy for generating knowledge, and strive to create communities of inquiry to foster both the development and critiquing of this type of research. Taken together, Dewey and Schön's concepts of reflective thinking and reflective practice have greatly influenced the practice of both teacher education and teacher research. A more recent look at reflective thinking and practice clarifies and brings into focus Dewey and Schön within the current educational context.

Additional Theoretical Literature

Defining Reflection: Another Look at John Dewey and Reflective Thinking (Rodgers, 2002) takes an in-depth look at the meaning of reflective practice in education by revisiting Dewey's views on reflective thinking. How is reflective thinking different than other kinds of thinking? How can it be assessed? Reflection is considered a critical component of teaching at every level, however, the term itself almost has no meaning because it has not been adequately defined, and Dewey's work, although cited, is not clearly understood. Rodgers tries to make Dewey's work on reflective thinking accessible by summarizing it using four criteria (p. 845): reflection as meaning-making, reflection as systematic, reflection as a community process, and attitudes that facilitate reflective thinking. She discusses each criterion in detail. Making meaning of experience *is* learning, according to Dewey. Educational experience, by definition, includes interaction with people, places, and ideas. Meaningful experience also implies continuity, that is, meaning from a new experience is built on meaning from prior experience. Some experiences serve to limit interaction and thinking, which leads to a cycle of routine action and the end of learning. The role of reflection on experience, then, is to make meaning that leads to learning. Rodgers relates this to teaching by suggesting that reflective teachers do not proceed with an action without making meaning of it. This stands in contrast to accepting conventional beliefs and unfocused thinking. Reflection is what helps create a connection between one experience and the next, and often occurs when we perceive a disconnect between current and prior experience. Rodgers also points out the similarities between these ideas of Dewey and the ideas of Schön, and describes Schön's steps of reflection, and suggesting that both theories imply learning within a community. She relates this to the benefits of collaborative reflection in teacher education (p. 857): affirming the value of our own experiences, seeing things in new ways, and

being in a supportive community of inquiry. Rodgers also discusses Dewey's emphasis on attitudes that facilitate reflective thinking: whole-heartedness, directedness, open-mindedness, and responsibility. Teacher educators must be intentional and diligent about understanding the true nature of reflective thinking. If we believe Dewey, this is what teachers do.

Teacher Research Literature

Definitions and characteristics of teacher research. The most frequently cited sources on teacher research are the writings of teacher educators Marilyn Cochran-Smith and Susan Lytle. These sources have greatly influenced what we know and believe about teacher research. *Inside/Outside: Teacher Research and Knowledge* (Cochran-Smith & Lytle, 1993), cited in almost every teacher research book and article written in the United States since its publication, defines and describes teacher research in the context of teaching and teacher education in the United States. Teacher research gives us the opportunity to present the insider's perspective on what is happening in the classroom, instead of always relying on the outside researcher's perspective. Cochran-Smith and Lytle call teacher research "a way of knowing" (p. 41). Teacher research essentially legitimizes teachers as "knowers." Citing Dewey and Schön and adult learning theory, Cochran-Smith and Lytle affirm that teachers can use teacher research to make sense of their experiences. They also underscore the importance of inquiry communities in which teachers generate local knowledge together. Cochran-Smith and Lytle wrote several articles and another important book in the years following this one.

The Teacher Research Movement: A Decade Later (Cochran-Smith & Lytle, 1999), discusses the decade-long resurgence of teacher education in the United States at the end of the 1990s, recounting the history of the latest movement, as well as reconfirming the concept of "teacher as knower" (p. 16). Cochran-Smith and Lytle also describe new types of partnerships

between university educators and teachers, identifying five major trends in teacher research that they had observed by that time. First is the importance of teacher research to teacher education and school reform, leading in some contexts to redefining the role of teachers to include that of researchers. Second is the development of a conceptual framework for teacher research as practical inquiry, collaborative inquiry, and as a way of knowing for teachers. Other trends include the spread of teacher research beyond the local level, the emergence of several critiques of teacher research, and the potential for teacher research to alter the relationships between university educators and teachers. They detailed the most significant critiques of teacher research: whether or not teacher research is real research, and whether or not it can generate real knowledge. They were cautiously optimistic about the future of teacher research in the growing context of accountability and the standards movement.

In *Inquiry as Stance* (Cochran-Smith & Lytle, 2009), written more than 2 decades after they started writing about teacher research, Cochran-Smith and Lytle found the teacher research movement alive and well in spite of the current climate of accountability based on testing. Here they reiterated the importance of redefining teaching as more than the simple transmission of knowledge, and of teachers as more than just simple "practitioners of other people's knowledge" (p. 11). Five themes have emerged in teacher research in the United States in the past decade: (a) Equity, engagement, and agency within teacher research; (b) New conceptual frameworks about teacher research; (c) The growth and development of teacher inquiry communities; (d) Teacher research impacting policy; (e) Changing relationships between research and practice in the university setting. The so-called science critique that teacher research is not "real" research (p. 46) remains an issue to be aware of. Cochran-Smith and Lytle contend that teaching an inquiry stance to preservice teachers is not as simple as a set of teacher research assignments, but rather

lies in “making practice problematic” (p. 121) so that for teachers, questioning becomes a way of being. By embracing teacher research, teachers become “knowledge generators, decision-makers, and deliberative collaborators” (p. 157). The literature by Cochran-Smith and Lytle continues to have a strong influence on the practice of teacher research throughout many contexts in the United States, including early childhood teacher education.

Although the terms “teacher research” and “action research” are not exactly synonymous (Herr & Anderson, 2005), the literature about both preservice and in-service elementary teachers often uses the term action research. Some of this literature can inform this study, and is included in this review. In a brief literature review in a themed journal for teacher educators, Levin and Merritt (2006) identified five significant aspects of action research that support its potential for empowering teachers. First, teachers, even preservice teachers, must have the opportunity to develop their own research questions. The studies reviewed also indicated that the systematic reflection on data required by action research leads to fresh insights and increased teacher confidence, however, the process of action research needs to be facilitated and supported by peers, administrators, or faculty to be sustainable and successful. As in other studies of action research, problems surface but can be seen as catalysts for change rather than barriers. Finally, when teachers solve real classroom problems with action research, it increases their knowledge, improves their practice, and results in teacher empowerment. A literature review of 34 published teacher research studies (Baumann & Duffy, 2001) identified 16 categories related to teacher research methodology that was organized into four themes, including the general attributes, the process, the methods, and the writing up of teacher research. Categories included question development, reflective practice, collaboration, pragmatic methods, and a narrative approach to reporting teacher research. The frequency of each category in the reviewed literature was

determined, and three types of categories emerged: defining categories (present in 90 to 100% of the literature), discriminating categories (present in 60% of the literature), and negative case categories (present in 26% of the literature). Twelve of the 16 categories were found to be defining aspects of teacher research. The authors concluded that because of the positive impact of teacher research, universities, schools, and professional organizations should support teachers in their efforts to conduct teacher research. These reviews assist teacher educators in defining the salient characteristics and benefits of teacher research.

Some of the literature focuses on the challenges of conducting teacher research. Gilbert and Smith (2003) identify several potential problems in doing action research, but conclude that these can be overcome with proper support and resources. A qualitative study of novice and mentor teachers who conducted action research projects revealed several issues and concerns. First, teachers often misunderstand what action research is and how it is different from traditional research. They have a negative view of research, and find it difficult to imagine themselves doing "real" research in their classrooms. Many teachers feel that action research is something that they do not have time for; they already have enough to do. Teachers also find it difficult to maintain the organized and methodical approach necessary to conduct action research. In some cases, teachers are discouraged by the sense that their research is never done, because they keep confronting more questions as they collect data. Finally, teachers reported that unforeseen barriers and events, such as a staffing changes, or a child leaving the class, sometimes get in the way of completing their research projects. It is important for teacher educators to be transparent about the challenges of doing teacher research and to be intentional about addressing them.

Teacher research with preservice teachers. Several teacher research studies have been conducted with preservice teachers in university teacher education programs. Although the context is different, these studies can be helpful in thinking about the practice of teacher research and doing research about teacher research in a community college teacher education program. Auger and Wideman (2000) outline and describe the benefits and problems associated with implementing action research in a university teacher education program. Based on the belief that new teachers should have the knowledge and skills to use action research in their practice, the authors conducted an exploratory study with 42 elementary and secondary preservice teachers using a grounded theory approach. Data sources included interviews, a questionnaire, student journals, meeting transcripts, and students' action research reports. Students identified benefits as well as problematic issues in conducting action research in a practicum. Benefits included the opportunity to improve their practice, an increased sense of professionalism, and an increase in confidence. One student's words captured the essence of the experience; "There is no way you can't learn from this" (p. 124). The problems that surfaced for students included time constraints, their lack of knowledge about how to do action research, and issues related to the practicum site itself. The authors concluded that because of the benefits and potential pitfalls, novice teachers require support and guidance to be able to sustain action research in their practice, and so they created a list of guidelines for beginning teachers. They also concluded that one of the significant tasks for teacher educators is to help their students see that their action research was valuable both to them and to the education community so that students could come to see themselves as having a role in determining their own professional development and practice.

Some of this research specifically emphasizes the role of teacher research in teacher identity development. Trent (2010) reported the results of a qualitative study of six preservice

secondary English language teachers in Hong Kong, asking the question, how does participation in an action research project impact preservice teacher identity development? Primarily informed by community of practice theory (Wenger, 1998), Trent began with a discussion of the common themes of teacher research and teacher identity development, followed by a review of the literature. The study was comprised of semi-structured interviews of the participants once they had completed their action research projects during their student teaching. The findings indicated that implementing action research gave the participants the opportunity to develop their teacher identities through the experience of engagement, imagination, and alignment as described by Wenger (1998). The students also experienced role ambiguity resulting from what they saw as conflicting teaching approaches. They actively pursued an identity as teachers different from those that they had experienced as students. Trent also discussed the important issue of the power differential between professor and student, a significant consideration for any teacher educator conducting research with and about her own students.

In another context, a group of teacher educators from the Netherlands (Ax et al., 2008) described a study that compared preservice teachers' action research experiences in three different Dutch teacher education programs (note: action research is the term used for teacher research in Europe and Canada). Action research can serve two different purposes in teacher education programs—to learn about a specific topic, develop an inquiry approach to teaching, or both. This qualitative study explored the lived experiences of both preservice teachers and teacher educators in implementing action research in the teacher education program. The authors outlined five criteria to be used as a lens through which they considered their findings, such as how action researchers both construct and apply professional knowledge, and how action research helps connect theory to practice. They were interested in informing a question about

whether or not preservice teachers experience action research at the same level as in-service teachers. The authors interviewed both teacher educators and students from each program, and conducted document reviews of the students' action research projects. Each program had its own unique approach to implementing action research, but there were common threads focusing on reflection and improving teaching practice. Their findings revealed potential problems associated with preservice teachers doing action research as part of their coursework. They discovered that for some students, the action research project is simply an assignment to be completed, not a critical component of best practices in teaching. In-service teachers value action research for the ways in which it improves their practice, but student teachers often do not make this connection. The authors suggested that teacher educators should use action research to enhance collaboration between the students and teachers in the community and embed it throughout the program to establish it as something that teachers do—research to improve their own practice. This study alerts teacher educators to some specific pitfalls to consider when assigning teacher research to their students.

In *Images in Action: Preservice Teachers' Action Researcher Images* (Subramaniam, 2010) the author noted that there has been scant research on how preservice teachers experience implementing action research as part of their teacher education programs. In this qualitative study, Subramanian explored how preservice teachers see themselves as action researchers. The participants in the study were 55 preservice teachers in a university elementary teacher education program in the northeastern United States as they implemented an action research project in the context of a student teaching course. Data sources were electronic journal entries, student narratives, focus group transcripts, and the students' final action research reports. Data were coded into common themes and member-checked. Two significant themes emerged. First, the

students perceived their student teaching classroom contexts to be either supportive or problematic in relation to their teacher research assignment. When the cooperating teacher was interested and enthusiastic about the project, students reported a positive, productive experience. When the cooperating teacher was limiting and unenthusiastic, students found it difficult to complete the assignment. The second theme involved student images of the work itself. Students characterized the action research project as either just another assignment to be completed, or as an opportunity to grow as teachers. The author concluded that teacher educators should be aware of the potential problems associated with assigning action research in a student teaching course, and try to address these issues. Cooperating teachers are not always supportive and students do not always perceive the value of action research to their practice.

In a study that has many similarities to this dissertation, Price (2001) conducted his own teacher research over a 3-year period to understand his students' experiences implementing action research as a course assignment. He collected field notes, student research journals and research reports, and conducted surveys and informal interviews with his students. His findings inform this study in terms of how teacher education students experience doing teacher research. He concluded that the research assignments helped meet his goals of having his students develop habits of reflection and inquiry, as well as develop relationships with schools and address issues of democracy and social justice. He reported that the experiences that are most important for students are becoming involved in a classroom community, sharing and discussing data with other students, looking into the literature to inform their projects, and writing reflections about the work. He found that action research served as a bridge between theory and practice, but involved two challenges for students, time and problems when cooperating teachers do not support the research. He concluded that doing the action research projects meets Dewey's

definition of an educative experience (Dewey, 1938) that helps students to redefine their identities as teachers to include inquiry. The students themselves mentioned that doing action research gave them a voice, and most importantly, that it had a positive effect on their development as teachers and on their practice.

Much can be learned about the practice and research of teacher research with preservice teachers from this literature, specifically the benefits of teacher research for preservice teachers and strategies for conducting teaching research with preservice teachers. In addition, much of the teacher research literature focuses on in-service teachers in professional development contexts.

Teacher research with in-service teachers. Rust and Meyers (2006) discussed the potential impact of teacher research by in-service teachers on educational policy development. Teacher research, implemented by teachers in their own classrooms, is just beginning to enter into policy-level discussions. The authors described a network of teacher researchers in which they are involved, Teachers Network Leadership Institute (TNLI), and what they called the "bright side" of teacher research (p. 10), that is, how a network of teacher researchers can impact educational policy. They spotlighted four exemplary teacher research studies, each representing a different policy area: school organization, professional development of teachers, instruction and curriculum, and assessment of teaching and learning. Teacher research makes explicit the complexities of classroom life, and the impact of policies on teaching and learning. It spans the gap between teachers and researchers, as well as teachers and policy makers. Teacher research is also challenging work. The authors surveyed 74 TNLI members and interviewed 22 of them to explore the teacher's thinking about the impact of teacher research on their practice. Teacher researchers reported that they are more reflective and more effective teachers. Their teacher research benefits their students because it improves their practice. A small number also reported

that their teacher research resulted in school-wide policy changes. The authors concluded that implementing teacher research in a collaborative network gives teachers a voice in the discussion of educational policy. This study points to the potential that teacher research has to help teachers not only be better teachers, but to see themselves as better teachers.

A recent study with in-service elementary teachers linked teacher research and teacher identity development. Goodnough (2010) connected teacher education research into self-understanding about being a teacher with Wenger's (1998) concepts about identity formation in communities of practice and the three modes of belonging to a community of practice. Goodnough discussed the format, methods, and findings of a 3-year qualitative study of teachers engaged in action research in a community of practice, exploring the extent to which the project influenced modes of belonging: engagement, alignment, and imagination for the participants by examining multiple data sources including interviews, field notes, and teacher artifacts. The author then considered an ecological model as it explains the connection between participant roles in the community and identity construction and reconstruction. In an ecosystem, each member has a role that operates in relationship to other members and within the context of the system, impacting the identity of each member. This study provides one framework for understanding community of practice theory in the context of teacher professional development.

Early childhood teacher research. Some of the teacher research literature is specific to early childhood education in the contexts of teacher education and professional development. This literature is particularly important in the practice and study of teacher research in early childhood contexts and to this study.

Early childhood teacher education. Hatch (2006) posed several questions for early childhood teacher educators to consider when implementing teacher research with their students

and discussed his own answers based on his practice as a university teacher educator. What counts as teacher research? It must be systematic inquiry using data for the purpose of improving practice. Can teacher research add to the knowledge base of early childhood education? In spite of the current climate of accountability and emphasis on scientific research, many teachers are informed by the qualitative teacher research of others. Hatch also discussed the problem of student teachers conducting teacher research when they are essentially guests in another teacher's classroom. He concluded that although teacher research has great potential to enhance the learning of preservice teachers, teacher educators must be aware of the challenges inherent in the process, especially in light of the disconnect between teacher education program philosophy and the current political climate in education discussed in chapter 1.

In a more recent article, Hatch (2012a) discussed why teacher research is important in early childhood teacher education and how it can be scaffolded for preservice teachers. Hatch suggested that doing teacher research in course assignments helps preservice teachers see themselves differently—as problem-solvers and life-long learners. This is a much more positive model than they might be seeing in their field placements, where current teachers are beleaguered by policies and perceptions that blame teachers rather than respect them. Early childhood preservice teachers are capable of implementing authentic teacher research when they are supported with frameworks and input from faculty, cooperating teachers, and peers. Both students and children benefit when teacher research is a component of teacher education.

Occasionally the early childhood preservice teacher voice is incorporated as coauthor with the teacher educator (Hatch et al., 2006). The process of implementing an action research project is described by the teacher educator, followed by two students who detail their individual projects and how they felt about them. Hatch concluded that action research can benefit any

preservice teacher program, and the two students endorsed their experiences as action researchers, citing the knowledge and confidence they gained in implementing their research. Both students strongly recommended that all preservice teachers participate in action research projects. There are several positive outcomes when early childhood preservice teachers conduct action research in their teacher preparation programs, including increasing pedagogical knowledge and validating teacher professionalism (p. 212). The voices of the students in this article mirror the voices heard in this dissertation and provide insight into how preservice teachers experience teacher research as a course assignment.

Early childhood teacher research about in-service teachers. The literature about early childhood in-service teachers can inform associate degree teacher education because so many of these students already work in the field while they attend college (Lutton, 2012). In many ways the students in community college early childhood programs are more like in-service teachers than the preservice teachers in the literature.

Hobbs, Williams, and Sherwood (2012) reported a National Science Foundation funded project involving university faculty and 24 preschool teachers. The teachers conducted teacher research around science teaching and learning in their classrooms while also participating in ongoing professional development in the area of science methods and content over a 2-year period. The teachers collected observations, child work samples, photographs, and video clips as they conducted their research. The authors suggested that all participants, including the faculty, learned as they collected data and reflected throughout the project, and teachers grew in confidence as researchers; what the authors described as "finding a voice" (p. 6). Teachers also became empowered as they presented their research in local and national conferences. The teachers described the benefits of being involved in the teacher research project as rewarding,

validating, interesting, challenging, and eye-opening. They also detailed the impact it has had on their practice in the form of increased engagement with children and becoming more reflective and intentional. These conclusions are very similar to the experiences described by the participants of this current study. Another model for using teacher research as professional development for in-service teachers is the teacher inquiry group.

There are several early childhood collaborative teacher research groups in the United States. One example is a statewide group in Vermont influenced by the Reggio Emilia approach to early childhood education (Goldhaber, 2010). Participants use documentation in a cycle of inquiry as their primary modality of teacher research, sharing their data with colleagues at regular meetings. These discussions give participants the opportunity to reflect on and interpret their practice, making meaning in the process. The group also created a small exhibit that has traveled throughout the state. Group members "pushed the boundaries" (p. 79) of their knowledge, pedagogy, and professional identities as teacher researchers. Cheyney (2008), an early childhood professional development provider, also described the benefits of collaborative teacher research groups for child care center staff. Citing the disparity in the field between theory and practice, Cheyney advances collaborative teacher research groups as one way to strengthen the connection between what early childhood teachers know and what they do. As in other teacher research literature, Cheyney emphasizes the need for teachers to develop their own questions and to share their research with a group of other teachers, administrators, or college faculty. She stresses the potential for teacher research groups to strengthen efficacy in early childhood teachers, who often have low-status, low-paying jobs, by giving them the opportunity to have their voices heard. It is important for associate degree teacher educators to keep these

benefits in mind as they consider how to create programs that not only stress the well-being of children, but the well-being of teachers as well.

In another article, Henderson (2012a) discusses the benefits of teacher research for individual teacher identity and groups of early childhood teachers when they participate in "socially constructed professional development" (p. 3), where teachers are comfortable with not-knowing and time is dedicated to questioning and discussion. Engaging in teacher research gives early childhood teachers the opportunity to become creators of knowledge, and professional development becomes less top-down oriented to being driven by teacher competence. Teachers and teaching can be transformed by reframing problems to be solved by others into questions of inquiry that can be illuminated by the teachers themselves. Teacher identity as inquirer develops through four phases, starting with the decision to become a more reflective practitioner, through systematic teacher research and knowledge construction, to teaching leadership as they "relate their findings with voice and confidence" (p. 2). Early childhood teacher research is moving in this direction as more in-service teachers themselves are contributing to the teacher research literature.

Early childhood teacher research by in-service teachers. Participants in a collaborative, 2-year early childhood teacher research project on language and literacy (Espiritu et al., 2002) discussed the positive impact of their research and involvement in the group had on their knowledge and professional development. The findings of this project, conducted in four early childhood settings, resulted in a list of guidelines and recommendations for promoting literacy in environments for young children. The participants described how the project supported them in generating knowledge and facilitated their professional development. They concluded that although the work can be time-consuming, being involved in a teacher research

group has significant potential to benefit practice and professional development in early childhood education.

Zooms: Promoting School-Wide Inquiry and Improving Practice (Mardell et al., 2012) describes a collaborative teacher research project in five early childhood classrooms from the perspective of the teacher researchers themselves. The project, focusing on power and engagement of children in small groups, culminated in the development of documentation panels that "zoomed" into a specific example of group collaboration among children. The researchers concluded that the project was a potent learning experience about supporting children's collaborative capabilities in their practice, and described how their participation influenced their identities as teachers as creators of knowledge, not just consumers. It also supported their culture of adult inquiry.

A teacher research project about outdoor play in early childhood settings (Neimark, 2012) also demonstrates the benefits of teacher research for children and teachers. The project focused on children's understanding of peer culture, how they attempt to enter a play situation, and how teachers can support children in accessing play scenarios with other children, and exemplified the bridging of theory to practice. The teacher researcher reported the benefits of the project for his own practice, as well as describing the sense of empowerment he felt when discussing his research with his colleagues.

Another article written by an early childhood teacher researcher, *Encounters with Sunlight and a Mirror Ball* (Spahn, 2012), narrated the story of a teacher research project about how children learn about light as it reflects off of a mirrored ball hanging in a classroom space in a Reggio-inspired early childhood program. It also explores how her own professional development around science learning impacted her practice. She collected journal entries,

photographs, video clips, and children's drawings and used them to enrich and illustrate the article. This is one of the very few articles that include the words of children, tracing their explorations, collaborations, and growing theories about how the mirror ball makes dots of light on the classroom wall. She concluded that the teacher research gives her tangible evidence of the impact of her professional development on her practice, and makes the children's thinking visible. This literature by early childhood teacher researchers is perhaps the most important of all in terms of informing associate degree teacher educators about the potential of teacher research to improve the lives of young children and their teachers.

The early childhood teacher research literature includes many common threads. Collaboration is viewed as a significant component of teacher research, serving as a solution to the common problem of teacher isolation (Given et al., 2010). This is consistent with much of the teacher research literature (Baumann & Duffy, 2001; Cochran-Smith & Lytle, 1993, 1998, 2009; Levin & Merritt, 2006; Lytle, 2012; Mardell et al., 2012; Perry, Henderson, et al., 2012). Early childhood teacher research literature also underscores the benefits of teacher research to teacher researchers working in complex systems, including reflective practice and teacher empowerment through the generation of knowledge and the opportunity for teacher voices to be heard (Christianakis, 2008; Crawford & Cornett, 2000; Katz, 2012; Lytle, 2012; Stremmel, 2012). This is also consistent with the main body of teacher research literature (Cochran-Smith & Lytle, 2009; Darling-Hammond, 2006; Gore & Zeichner, 1991; Meyers & Rust, 2003; Rust & Meyers, 2006). Another theme echoed in the early childhood teacher research literature is the potential problems involved in implementing teacher research, such as time constraints and lack of knowledge about how to do teacher research (Hatch, 2012b).

The tradition of early childhood teacher research can also be traced to the practice of influential leaders in early childhood such as Maria Montessori, Lucy Sprague Mitchell, Caroline Pratt and Harriett Merrill Johnson, who all practiced and championed systematic and naturalistic inquiry to generate knowledge about children and improve practice (Crawford & Cornett, 2000). Far from being and educational fad, teacher research in early childhood education stems from a long tradition of leaders in the field who tirelessly advocated for children and teachers. Early childhood teacher researchers can contribute to knowledge, practice, and policy.

The literature on reflective thinking and practice, teacher research, and early childhood teacher research provides the theoretical, research, and practical foundations for this study. The most significant gap in this literature is the complete absence of community college teacher education programs.

Chapter 3: Methodology

Research Design

The purpose of this study is to contribute to the literature and inform the practice of teacher research in teacher education and early childhood education, as well as to initiate a discussion about teacher research in community college early childhood programs. This study addresses the following primary question: What happens when community college early childhood students conduct teacher research as a course assignment? There are also three secondary questions: What stands out about teacher research for these students? What challenges do they encounter doing teacher research? What do they think about teacher research?

The characteristics that make this a qualitative study are the reasons why I chose a qualitative approach (Creswell, 2007; Mertens, 2009). The nature of the problem and question both point to an exploratory method of research. What little is known about teacher research in community college programs is largely anecdotal and extrapolated from university studies as there is no literature about teacher research specific to community college programs. This study was conducted in a natural setting, the community college classroom and the early childhood field placement sites. This is the real world, where children, teachers, families, professors, and students work, play, and learn together. The study is based primarily on the voices of the participants, seeking to understand and create a complex description of the experience of early childhood community college students as teacher researchers. The participants have what I consider to be an authentic relationship with me, the researcher, both as professor and former students, and now as colleagues in the field of early childhood education. Every attempt was made to minimize the power differential between myself and the participants. The study utilized multiple qualitative data sources, and data were analyzed inductively throughout the data

collection period and beyond. The study design was developed on the naturalistic inquiry model based on Lincoln and Guba (1985) following the steps outlined by Hatch (2002) and Erlandson, Harris, Skipper, and Allen (1993). The focus of the inquiry is what happens when early childhood community college students implement teacher research as a course assignment. The boundaries of the study, therefore, are *early childhood community college students,* who have completed a *teacher research project* as a *course assignment.* The naturalistic inquiry approach fits this study because the axioms of the naturalist paradigm are all present (Lincoln & Guba, 1985, p. 36). The constructed reality of multiple participants was studied holistically with the goal of understanding the experience. I, the researcher, and the participants have well-established, authentic relationships. My values were present, transparent, and influential in the study. I collected the data personally within the context of the field sites or college classroom. Data analysis began with data collection and continued throughout the study. Trustworthiness was built into the study design in a variety of ways including data triangulation, peer debriefing, member-checking, and thick description. I also kept a reflexive journal and carefully documented all correspondence, memos, raw data, and evolving versions of data analysis.

Narrative inquiry approaches (Clandinin & Connelly, 2000b), voice-centered method (Brown & Gilligan, 1992; Gilligan, Spencer, & Bertch, 2003), and descriptive content analysis (Ball & Smith, 1992) were used for data analysis within the framework of qualitative research. My stance as a constructivist was also a thread throughout all of these choices. I believe that my practice as an early childhood teacher educator literally consists of co-constructing knowledge with my students, and this is reflected in every aspect of my practice.

This chapter begins with a description of the study setting, the participants and their projects, and the courses in which the projects took place. This is followed by a definition and

discussion of the types of data collected and some of the literature connected to each type of data. Next, the data analysis procedures are explained and supported by the literature. Finally, ethical issues and questions of trustworthiness and limitations are discussed.

Setting

The setting of the study is a small, rural, state-funded associate degree-granting institution of higher education in the northeastern United States. The college enrolls approximately 5000 students each semester. The Early Childhood Education Program sits in the Department of Social and Behavioral Sciences and Human Services, and has an enrollment of approximately 200 students, most attending part-time and already working in the field. I am the one full-time professor and program coordinator, and there are four to five consistent adjunct instructors each semester. The program offers two Associate in Science degrees and two certificates in early childhood education, and is accredited by the National Association for the Education of Young Children (NAEYC).

Participants

The number of participants was determined based upon the large amount of data I had for each one, resulting in a robust data set for the study overall. There were eight female adult participants in the study; the youngest participant was 27 years old. All are former students who completed the teacher research project in a course within the past 9 months. Former students were invited to participate rather than current students to diminish potential issues of power imbalance. Students who had completed the teacher research project from the two most recent semesters were invited to participate based on the assumption that the more recent the experience, the more richly students would recall it. Participants were contacted by email to invite them to be involved in the study. The participants represent a variety of nonurban early

childhood settings within the college service area (see Table 1). All but two of the participants were employees in their respective settings at the time of the teacher research project, and all were working with preschool-age children, ages 2 to 5.

Table 3.1

Overview of Participants

Participant	Type of setting	Age group	Employee or not
HB	Head Start	Preschool	Yes
DC	Head Start	Preschool	No
MT	Group, full day	Preschool	Yes
JM	Head Start	Preschool	No
DT	Group, half day	Preschool	Yes
JG	Family, full day	Preschool	Yes
MH	Group, full day	Preschool	Yes
AP	Group, full day	Preschool	Yes

The participants completed a teacher research project in one of three courses: a selected topics course in teaching math to young children, an independent study in classroom management, or the practicum course. The practicum course is a required course. The other two courses are electives. Although there are different guidelines for the various course assignments (see Appendix A for assignment guidelines), all participants chose a teacher research question, collected and analyzed at least three types of data, wrote a report, and presented their findings to their class. I scaffolded the projects by creating concrete teacher research planning and reporting forms, as well as a presentation about teacher research, which we discussed in class and then was available for students to revisit on the course website. We also had regular check-ins during class that I call data-shares, when students brought in samples of their raw data for us to talk about with the class.

Math Methods Course

The teacher research project in the math course involved each participant choosing an area of math to implement in their classroom, choosing from number sense, shapes and spatial sense, patterns and relations, or measurement, and then creating a math kit to introduce to the children. The math kit included both commercial and teacher-made math materials, activity cards aligned with the state mathematics curriculum guidelines, and a related children's book. They collected and analyzed specified data including photographs, artifacts, and observations to determine how the kit impacted engagement and math learning in their classroom. The students presented their data, findings, and their math kits to the class in the final meeting. This was a hybrid course involving an online component, and students were also required to post at least one update online in the discussion board as they implemented their projects between the face-to-face classes. The wording of the questions in this assignment was similar to each other in the math course, the difference being the type of math kit each student chose to work on. Three of the study participants did their teacher research in the math course, one on number sense, one on patterns and relations, and one on shapes and spatial sense. The math topics for the teacher research come from the state curriculum guidelines (Early Childhood Advisory Council of Massachusetts Board of Education, 2003). Number sense involves counting, sequencing, and one-to-one correspondence. Patterns and relations involve matching, sorting, recognizing and making patterns using materials like blocks. Shapes and spatial sense involves shapes and spatial concepts such as under and over.

Independent Study

One of the study participants completed a teacher research project in an independent study in the last semester of her program that involved choosing a question related to a classroom

management issue in her classroom, and then collecting and analyzing data such as photographs, artifacts, observations, and classroom maps. She attended and presented data at three data-share meetings with the faculty facilitator and two other teachers also working on independent teacher research projects in their own settings. She wrote her report and shared her findings with the group at the end of the project. The teacher research projects in the math course and the independent study were the final assignments in the course.

Practicum Course

The teacher research project in the practicum is assigned as part of the portfolio for the capstone practicum course, where students complete 150 field hours as student teachers in an early childhood classroom. Students choose their own questions from any aspect of their practice, plan and implement the data collection, analyze the data, and write and present a final report to the group with their conclusions. The project assignment is introduced at the beginning of the semester, and students participate in two seminar sessions where they share and discuss the raw data that they have collected prior to presenting the final project and results in the third month of the course. Four participants in this study completed their teacher research project in two different sections of the practicum course.

Participant Projects

The following profiles describe each participant's project, including the setting, questions, types of data collected, and a brief synopsis of their findings in their own words from their written reports. The projects covered a wide range of topics, including children in foster care, morning drop-off, free play and prosocial play, cooking activities, and math learning and engagement.

HB's project setting: Head Start classroom for preschool-age children. The question for this project was, how do I support twin girls in foster care, especially after they visit their birth mother? The data collected for this project included classroom maps, anecdotal records, artifacts, photographs, and teacher reflections. A sample of the findings follows:

> L and K have done a complete 360 from where they were in November when I first started my teacher research project. I have been working diligently with the twins for about three and a half months now trying to help support them as best as I can in the classroom. The twins and their sister are currently living with their maternal grandmother. After about three weeks of adjusting to their new living situation, they are now thriving in the classroom. The twins are finally starting to show less stress and social emotional issues. I have been working with my coworkers and we have come up collectively with strategies that have helped the twins become successful in the classroom. (HB)

DC's project setting: Head Start classroom for preschool-age children. The question for this project was, how can I support children at drop-off? This project also addressed one subquestion: Where do children go at drop-off? The data collected for this project included classroom maps, anecdotal observations, interviews with teachers. A sample of the findings follows:

> Before I began doing my teacher research, I thought drop-off was difficult for a larger number of children in the classroom. However, once I began to focus on this time of day I began to notice that it was actually only a few that seemed to have difficulty each time I observed. The teachers tend to be busy during the morning setting up for the day and discussing a variety of issues, so the focus is not on the arrival of the children. Saying

goodbye to parents can be difficult for any child. Many of these children have experienced trauma and are living in poverty. The teacher's role during this time should be supporting both the children and their families. (DC)

MT's project setting: Full-day, private, not-for profit childcare for preschool-age children. The question for this project was, how do children engage in free play? Subquestions: When and in what areas do children become most prosocially engaged? When and where do they have problems? The data collected for this project included photographs, anecdotal observations, running records of dialogue, and daily tallies. A sample of the findings follows:

> The children in the class seem to free play better when there are fewer children present. This stems from limitations (in the number of children allowed to play in an area at one time) and/or changes that could possibly be made (in the area). I also felt that there were areas that were more inviting than others, which also caused boredom when children couldn't choose where to play. I also concluded that the teachers give verbal and nonverbal cues to the children in order to help them engage prosocially, and gave the children opportunities to help them practice and strengthen their self-regulation skills. (MT)

JM's project setting: Head Start classroom for preschool-age children. The question for this project was, where do prosocial behaviors most often occur in the classroom? Three subquestions were used in this study. The first was, is there a certain time of day that shows more prosocial behaviors? The second was, why do some areas show less prosocial behaviors? The third was, what type(s) of activities show the most prosocial behaviors? The data collected for this project included classroom maps, anecdotal records, photographs, and sketches. A sample of the findings follows:

> I found that the children exhibited prosocial behaviors most often when they engaged in activities that did not involve teachers. They were also usually in areas that provided enough space for every child but involved working together. For example, in the block area the children often worked together to build something, but they also had enough space to spread out and not end up arguing. Another example is the sand table because the children often act out stories with each other while using the props there. I noticed that free play was an important time when prosocial behaviors occurred most often. (JM)

DT's project setting: Half-day, private, not-for-profit childcare for preschool-age children. The question for this project was, how can I ignite an interest in healthier snacks using fruits and vegetables in the classroom? Two subquestions were used for this project. The first was, if the children participate in the preparation of a healthy snack, will they be more likely to eat it? The second subquestion was, will they be able to use the kitchen tools effectively? The data collected for this project included photographs of process and outcomes, anecdotal records, informal interviews. A sample of the findings follows:

> My findings directly answered my questions and subquestions. The children's interest in fruits and vegetables was ignited and they were more willing to try fruits and vegetables when prepared inside a recipe. Also, they were more apt to try the vegetable raw afterwards. The more cooking projects I engaged the children in, the more interested and flexible they became in cooking and using the kitchen tools. Based on the data it is apparent that they all grasped the concept of measuring "how much" of an ingredient goes into the recipe and they all understood the recipe concept. (DT)

JG's project setting: Family child care for preschool-age children. The question for this project was, how will introducing a comprehensive number sense math kit impact children's

learning opportunities and engagement in my classroom? The data collected for this project included photographs, and anecdotal observations. A sample of the findings follows:

> Introducing a comprehensive number sense math kit impacted the children's learning opportunities and engagement in math activities in the classroom by opening up my mind as to what they could handle learning and what I could teach them. One thing I have noticed is we don't have many books with numbers being the main theme and this I would like to change. Over all the changes that have been made impacted the learning in the classroom, by writing down what needs improving and making those changes. Most of all, me looking at math differently changes a lot of what we do and how we do it. We find number sense everywhere now. (JG)

MH's project setting: Full-day, private, for profit child care for preschool-age children. The question for this project was, how will introducing a comprehensive shapes and spatial sense math kit impact children's learning opportunities and engagement in my classroom? The data collected for this project included photographs, artifacts, and anecdotal observations. A sample of the findings follows:

> The changes of intentional teaching with math have been very positive for the engagement of children and learning in the Preschool One classroom. The changes have included a staggering interest in block building from both boys and girls and a strong desire to draw shapes. Often throughout the day, "I see a circle," or "Look! There's a square!" is now heard and followed by, "I see one, too!" I also found that there are far more options outdoors than I could have imagined for math opportunities. (MH)

AP's project setting: Full-day, private, for profit child care for preschool-age children. The question for this project was, how will introducing a comprehensive patterns and

relations math kit impact children's learning opportunities and engagement in my classroom? The data collected for this project included photographs, artifacts, and anecdotal observations. A sample of the findings follows:

> I have a much better understanding of the state math guidelines and how to work my curriculum around them. The children were very receptive to the patterns and by the end; some of them could do it on their own. Although I doing math activities every day, I was not fully aware of the outcomes they could produce. My class was very open and willing to try new ideas. I found that if I was excited, they would be excited also. I learned through this process how to extend play and make a more extensive math program. (AP)

Data Collection

The study was designed to seek two kinds of information, descriptive and perceptual. What did the students do for their teacher research projects, and what do they say about it? This qualitative research study utilized four sources of data: (a) a 1-hour face-to-face interview with each participant; (b) each participant's written teacher research report; (c) field notes from the classes where the teacher research was discussed and presented; and (d) photographs of the participant's data and presentation displays. The written reports, field notes, and photographs are evidence about what the participants did at the time that they did the teacher research. The interviews, conducted 3 to 6 months after the projects, gave insight into the participants reflecting backwards and forwards about their experience. The 1-hour interview was semistructured (Patton, 2002) and included seven open-ended questions (see Appendix B for interview protocol) seeking perceptual information (Bloomberg & Volpe, 2012) about the participant's experience doing teacher research.

Interviews

The interview questions were tested in the pilot study and found to be productive, with a few changes resulting from my doctoral committee feedback. I also developed an individualized question for each participant based on their written reports or my field notes (see Appendix C for individualized questions). For example, my field notes from one participant indicated that she had stated that her friends who are teachers told her that teacher research is usually an assignment in graduate school, so I asked her what she thought about that.

The interviews conducted in the study share the characteristics described by Mishler (1986), who defines an interview as a form of discourse between two speakers of a shared language (p. 10). Mishler refutes the notion of interviewing as a de-contextualized technical practice (p. 23). Far from being objective and uninfluenced by the interviewer, an interview is essentially a conversation, not a series of disjointed questions and answers. The purpose of the conversation is the joint construction of meaning. Interview responses can be thought of as stories that can be understood through narrative inquiry, because they have many characteristics of narrative, including time, place and relationships. Mishler stresses the importance of personally taping and transcribing the interviews, rather than only taking notes or filling in answer sheets. This approach seemed best-suited for the purpose of my study, and I taped and transcribed the interviews myself. He also suggests that the researcher should listen to the transcript several times and engage in member-checking to increase credibility, and I followed this advice as well.

Teacher Research Reports

Each participant wrote a report describing their research at the end of their project. The students' teacher research project reports include a description of the student's early childhood

classroom context, each students' teacher research questions, the data they collected, as well as their findings, conclusion, next steps, and reflections. As indicated in the literature review, most of the university studies of preservice teachers that I reviewed utilized student reports as a data source.

Photographs

The photographs are my documentation of the students' documentation photographs of their classroom research (Edwards et al., 1998). The use of visual data in qualitative research is a growing trend (Moran & Tegano, 2005), and documentation has been increasingly widespread in early childhood programs with the emergence of the Reggio Emilia approach to early childhood education. The photographs of student documentation provide evidence of how participants used their photographs to support and demonstrate the knowledge they generated in their teacher research projects. Moran and Tegano (2005) characterize photo-documentation as a visual language, tracing the history of photographs as data in qualitative research in the social sciences to visual ethnography in the mid-20th century. Early childhood teacher researchers use photographs for inquiry in three different ways—representational, meditational, and epistemological. In a representational sense, teacher's photographs become symbols of their practice. Meaning is found both within the photographs and the teacher, as well as outside of the photographs when they are viewed by children, families, administrators, and colleagues. Inherent in the meaning is the teacher's intentions for the inquiry. What is the teacher trying to find out? Teachers also use photographs for meditational thinking. This happens when the camera becomes the tool to express their mental models, and epistemological thinking, and then they use photographs as a source for generating knowledge about children and teaching. Teachers can revisit the moments the camera has captured and question their thinking and practice. The

photographs I have of my student work provided important insights into what they thought was important to include in their teacher research projects and how they used visual documentation to support their conclusions.

Classroom Field Notes

My field notes of class discussions and teacher research presentations in all three of the courses also provided insight into the participant's experience and learning at the time of the projects, and provided another basis for triangulation with the other study data.

Brief follow-up emails were used as a process for member-checking and to ask additional clarifying questions.

Data Analysis

I analyzed the data throughout the study as it became available. I had access to the written reports, field notes, and photographs prior to the interview data. In addition, I wrote analytic memos throughout the data analysis phase.

I conducted a pilot study with four participants in the 2012 spring semester, using their written reports and an interview with each one as data. In that study I used a simple coding strategy (Saldana, 2009) and I found six emergent themes: (a) collaboration, (b) doubt to knowing, (c) aspects of teacher research that stood out, (d) challenges of doing teacher research, (e) metaphor, and (f) teacher voice. Although there are strong similarities between the categories in the pilot and in this study, I intentionally did not name the pilot study categories in the beginning of this study so as not to miss any new categories that might be present. During the pilot study I also worked on refining my thinking about teacher voice and this lead to my discovery of the voice-centered methods (Brown & Gilligan, 1992; Gilligan et al., 2003) used in the current study.

Throughout this study I considered Bruner's (1986) discussion of narrative knowing as I thought about the data. Bruner considers narrative as a distinct way of knowing and making meaning, as contrasted to logic and scientific processes. Human beings make sense of their experiences by using narrative, or stories to connect experiences in their lives. He states that what we say and whether or not we say anything has to do with how our map of possible roles "shapes our sense of what is a culturally acceptable transaction and our own scope and possibility of doing so" (p. 66). I immediately thought of my students when I read this. Is this the first time they have been "knowers" and "tellers of knowing?" This leads me to wonder if teacher research helps to put them in that role. This is my sense when I hear them in class talking about their data and their research findings. They seem to speak with confidence and conviction. Do they feel that too?

Photographs

There were four to 10 photographs for each participant, for a total of 50 photographs, which included photographs that I took of their artifacts of children's work, their photographs from their projects, observations, classroom maps, and reflections (see Appendix D for a sample of photographs). The 50 photographs of student data and teacher research presentations were the first data I analyzed, using the qualitative descriptive content method (Ball & Smith, 1992). What did they think was important to share and present? As I studied the photographs I found that they fit into one of two categories: what children did and what teachers did. Influenced by the documentation publications from Project Zero (2003), I called these categories Making Learning Visible (MLV) and Making Teaching Visible (MTV). The two categories were essentially equally represented in the student documentation. I also noticed that each student had exceeded the assignment requirements, bringing in more, sometimes substantially more data than

they were assigned, or going above-and-beyond the required components. I tentatively called this category In-depth, and then changed it to Initiative to denote that they had taken the initiative to do much more than the assignment asked for. I made notations directly on my printed copies of the student documentation, and then created a data summary chart (Bloomberg & Volpe, 2008) for this information. Once I got to this point in analyzing the photographs, I moved on to analyze their written teacher research reports.

Written Teacher Research Reports

The student teacher research report data included eight written reports, one from each participant. They varied in length, but averaged three pages, so 24 pages of report data were analyzed. I initially used the voice-centered method of analysis (Brown & Gilligan, 1992; Gilligan et al., 2003), as described above, reading the reports once through first for the narrative of the student's teacher research project. Next, I highlighted all of the sentences that started with "I," and color-coded them according to whether they were speaking as a learner or a teacher. For example, AP wrote, "I have a much better understanding of the state Math Guidelines and how to work my curriculum around them." I coded this as "I as learner," because she talked about what she learned during her project. Later in the report she wrote, "I plan on sitting more often to extend play with manipulatives. I want to start giving jobs to the children, offering opportunities to do math such as setting the tables (one-to-one correspondence)." I coded this "I as teacher," because she talked about how she would apply the learning to her practice. I noticed right away that every report included both "I as learner" and "I as teacher" sentences. Finally, I highlighted the sentences that talked about relationships with children, families, and coworkers, such as HB writing "I have been working with my coworkers and we have been coming up collectively with strategies that have helped the twins become successful in the classroom."

I created a data summary table (Bloomberg & Volpe, 2012) for the report data, and I immediately noticed that each report had a statement that clearly illustrated the student questioning her own assumptions or practice, the hallmark of reflective practice (Kenneth Zeichner & Liston, 1996). I compared the data summary charts for each data source throughout the study.

Interviews

Interview data, the last data I collected and analyzed, were analyzed using the voice-centered method of data analysis (Brown & Gilligan, 1992; Gilligan et al., 2003), in which the researcher completes four readings of the interview transcripts listening for different aspects each time. The first reading is for the content or story, the second is for the self or the voice(s) speaking the story, and the third and fourth are for relationships with others. The process I outlined as it relates to my research is to listen the first time for the content of their experience, the story of what they did. Second, listen for voice whenever they use "I." When are they speaking as learners? When as teachers? The relationships I listened for in the third and fourth readings are those with children and colleagues, and then when they spoke about teacher research. I found that this model illuminated the data analysis and focused on the participant's voices much more than a coding-only approach. In addition to the above, I then used open coding of each listening result, then looked for emerging patterns and themes (Saldana, 2009), sorting the data using Weft QDA, a simple online open-source qualitative data analysis tool. I created files for each code and each participant's "I" statements, making later analysis much easier because everything was in separate files. I also used both narrative analysis and analysis of narrative (Polkinghorne, 1988). I developed the story or profile of each participant's experience, but also looked for themes within the stories. The participant profiles begin with a segment of the

"I" statements from the voice-centered analysis, and also include their context, their question, their findings, what stood out for them, what challenged them, and how they describe teacher research. Each profile includes two to three direct quotes from the participant to include their voice in the telling.

Ethical Considerations, Trustworthiness, and Limitations

It is important to minimize the power differential in a study involving professors and their students (Trent, 2010). Every effort was made to adhere to ethical practice in all aspects of the study, and all participants had received their grades for the course prior to the request that they participate in the study. Participation was voluntary and confidential. All participants signed informed consent forms. No child care centers or children were named in the study. The participants wanted to use their real names, so I settled on using initials instead.

A significant consideration in this type of study is the extent to which it is trustworthy, including its credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). This study utilized methods triangulation with multiple data sources, researcher reflection and transparency, peer de-briefing and member-checking of individual findings to address these issues.

A limitation of this study is the small sample, which might not even be representative of the students in the program, much less of other programs. Each of the eligible participants in the study had been successful in completing their teacher research projects. This might not always be the case and this could influence the results. Also, I, the researcher have a clear bias that teacher research is an important strategy in teacher education, so I needed to be diligent about being open to all data and acknowledging that bias. The inclusion of several photographs in the

appendices and of multiple examples of each participant's voice contributed to the thick, or detailed, description (Geertz, 1977) of the findings.

Chapter Summary

This chapter describes the research design of this qualitative study. I collected multiple sources of data, which were used to analyze the study: photographs of student work, student's written teacher research reports, interviews of each participant, as well as field notes and short follow-up emails.

In the final analysis I considered how the different data sources triangulated by creating data summary tables for each type of data and then comparing the data within each participant's experience as well as across all of the projects. I created a profile to tell the story of each participant's experience, and then described the common themes that emerged from the analysis of all of the participants' responses.

This chapter described the type of study I implemented, the participants and their teacher research projects, as well as the strategies for data collection and data analysis. The following chapter presents the study findings.

Chapter 4: Findings

A total of eight interviews and eight teacher research reports were analyzed combining the voice-centered method (Brown & Gilligan, 1992; Gilligan et al., 2003) with both narrative analysis and analysis of narrative (Polkinghorne, 1988). After transcribing the recorded interviews, I read and reread each transcript as suggested by the voice-centered method. In the first reading, I listened for the story of what happened when they did their teacher research. In the second listening, I highlighted every sentence that included the pronoun "I," and created an "I-poem" for each participant (see Appendix E for complete I-poems). In the third and fourth listening, I noted what they said when they spoke about the children in their classrooms, and what they said when they spoke about teacher research. In addition, 50 photographs (see Appendix F for a list of the photographs) of student data and presentations were analyzed using descriptive content analysis (Ball & Smith, 1992). A narrative was constructed about each participant's project, and several themes emerged consistently across all three data sources: (a) the importance of relationships with children and colleagues in their classrooms; (b) evidence of questioning or changing their assumptions, practice, or both; and (c) The journey from doubt to knowing that they experienced as the projects were implemented. Participants also identified aspects of the teacher research that stood out for them, the challenges that they encountered and how they solved them, as well as their thoughts on the value of teacher research. Throughout the interviews and reports, I could identify two voices—the voice of the learner and the voice of the teacher. My findings will be presented first in the profiles of each participant's project, then in the themes that emerged through the stories. Each profile begins with a short stanza from the participant's I-poem, generated by the voice-centered analysis of their interviews. I also identified what seemed to be the unique aspect of each participant's approach to the projects,

choosing an adjective to signify each participant as a learner based on a statement or statements that they made during the interview, especially the I-poems. During member-checking, I sent each participant her own profile, and then sent out an anonymous survey asking if the profile reflected their experience and what they told me. Every participant indicated that the profile "very much" reflects their experience and what they said in the interview.

The Participant's Profiles

HB: Compassionate learner. "I have never been in foster care. This hit home. This was a problem and it made me really sad about the girls, so I think when I reflected, I was really going deep and I tried to see what they were seeing and deal with what they were dealing with." HB did her teacher research project in a Head Start classroom where she has been employed as a teacher throughout the time she attended college. She had done teacher research projects in two previous courses, the only participant who had prior experience with teacher research. HB completed this project as an independent study, investigating ways in which she and her coworkers could support twin girls in foster care who were in her classroom. In addition to data collection, HB did a comprehensive literature review and kept a detailed journal throughout her project. Through her teacher research, she found many strategies to help the girls feel safer and happier at school, most importantly to let them know what was going to happen next, to be consistent, and to follow-though when giving them choices. She noticed a big change in the twins between the beginning and end of her project, and she noted that the strategies were also helping the other children in the classroom. She wrote in her report, "With gentle reminders the twins can usually snap out of a moment of being upset because they realize that there are other ways that they can express themselves or solve a problem." She noted in her interview,

> They weren't as anxious, they had less anxiety. They used to rock back and forth to self-soothe; but you see a lot less of that and they are just happier. They are not under trauma or stress at school. The girls were interacting with the other children; they weren't isolating themselves as much together. (HB)

HB found that several aspects of her project stood out for her—the data collection, the literature review, sharing the data with others, and most important, her research journal. In many ways the challenge that HB faced was also the most significant outcome of the project; getting her coworkers to all work together and be consistent in the way they interacted with the girls when there were problems.

> We were going to try something different and be consistent with what we were doing; not do it one time and go back to your ways and keep going. It might not work the first time, but let's keep going. Then they started to be universal; we use it with all the kids now. (HB)

HB noted that her current teacher research project was much more complex and comprehensive than her earlier ones. She has found the systematic nature of teacher research to be very helpful; worth the time and effort to do it, and can see how it can be used to learn more about any issue or problem in her practice.

> Seeing the benefits of teacher research makes you want to do it. It's like helping yourself in your own life, your own aura, your own mental sanity [laughs]. It is being proactive to fix something or work toward something. (HB)

HB's compassion was evident in her commitment to using her teacher research to find strategies to help support the twins in feeling safe and happy in school, regardless of what was happening in their lives outside of school. In the end, HB, in collaboration with her Head Start

colleagues, as a result of her research believed that she could create a classroom climate that was more supportive and safer, not only for the two girls who were the focus of her project, but for all of the children in her classroom.

DC: Dedicated learner. "I was trying to find out, 'What are they (children) coming from into this classroom?' 'What are they bringing with them and how do we meet those needs?' I basically did the best I could [laughs]." DC implemented her teacher research project in a Head Start classroom where she completed her practicum hours. Unlike most of the participants, DC was not an employee of the setting in which she did her research; however, she did have prior experience working in another child care center. DC was investigating morning drop-off and ways to make it less stressful for the children. She had noticed that this time seemed to be chaotic and stressful not only for children, but also families and staff, and concluded that the classroom did not have an intentional plan or routine for morning drop-off. She was keenly aware of the difficult circumstances experienced by the children in the program and dedicated herself to finding ways to help children feel welcome in school. In her report she wrote, "Most of the children have experienced or are experiencing some form of trauma in their lives. Some are living with aunts, uncles, grandparents, single-parent households, and most of the children are living in poverty."

Although she was not an employee of the center, DC made suggestions to the Lead Teacher about changes to support the children and also adjusted her own practice at drop-off time. In her interview she related,

> I did suggest, "Why don't we make some space over by the window so they can look out the window, so they can see their parents leave?" I also became, I tried to be the person to greet. I always made the effort; I mean it really wasn't an effort; I just made sure I made

> the connection with the kids when they came in; trying to engage them and talk to their parents. (DC)

In class and in her interview DC said that she was struck by how much she could determine once she examined all of her data and reflected on it. “I thought I hadn’t done anything, but I laid it all out and there it was!” She found the most challenging aspect of the project to be her status as a student teacher, rather than an employee in the program, however, she did speak up.

> I didn’t have that information (about individual children) and I was a little uncomfortable asking for that because I didn’t know how comfortable they would be with sharing that information with me. I didn’t know how they would respond to that. But I *did* it, in a very gentle way. (DC)

The center staff took DC’s suggestion about making a space for children to wave goodbye to family members at drop-off time, and a new staff person started in the classroom who also supported families and children in the morning, so DC stated that the problem was greatly improved by the end of her practicum. DC’s dedication was demonstrated by her unwavering intentionality to use her teacher research to find solutions to support the vulnerable children in her classroom. Even though she had little authority to make changes, she persisted until she found the things that she *could* do to make things better.

DC noted about teacher research that, “I would say it is definitely worth doing and enlightening.” In her job, DC supervises family child care providers and would like to introduce teacher research to them as a professional development opportunity. She worries that they might not be interested in doing the work, but she would like to try to help them see how it could benefit their practice.

MT: Determined learner. "I am still working; I am still learning; I am still using this (pointing to her teacher research report). I have to say, I am still using it. I know it is going to help my other teachers because they have limits (on the number of children allowed in an area), too." MT did her research in a full-day setting in a classroom for 3-year-olds where she was a new employee at the time. She had noticed that free play did not always go smoothly, so she decided to do a descriptive study to see what was happening—when and where were problems occurring? She could not photograph the children, but she did photograph and analyze the free play areas such the block area, puzzles, and dramatic play. She also created two observation templates, one for time-sampling each area to see where children were playing, and one for anecdotal records to record incidents when play was disrupted because of arguing or other strong emotions. She concluded that things went wrong when children were limited as to where they could play and what they could play with, which often occurred.

She noted that her subquestions, such as, "where do children become most engaged?" became more important once she started her observations. The biggest challenge for MT was that she was not able to implement the changes she wanted to try in the practicum setting because she was a new employee in an assistant capacity. However, she was not daunted. She currently has her own classroom in another setting and has used her teacher research findings from the practicum to rearrange the classroom there.

> It *has* [emphasis original] stuck; this thing has stuck with me because I learned from it and I got to see . . . it is easier when it's your own class, because you can fix things and tweak; it took me a couple of years, but I got to do it. (MT)

She continues to use observations and reflection on a daily basis to keep track of how things are going in her current classroom. She plans to introduce teacher research to her colleagues in her current setting in her capacity as Assistant Director.

> I am doing team meetings, too, and we discuss things in the classroom that have issues, so this is something that I can use also. I have to administer the meetings, so I can use it now. "Why don't you try this in this area?" (MT)

To MT teacher research is a learning experience that all teachers should use. She said in her report, "I learned a lot doing this research project and it was an educating experience. It helped me to understand the children regarding their prosocial skills and how we as teachers can help to engage the children." She stated in her interview,

> It was a big learning experience. I think a lot of people should do it to be honest with you, even if they take something small; I think we should be doing it in our practice, period. In our own centers; at a staff meeting, "Hey, let's pick this and for a week or two find out what we can change." (MT)

Even though she was not in a position to make changes in the classroom where she conducted her research, MT's determination to use her teacher research findings was actualized months later when she had her own classroom and was able to successfully implement her earlier findings right away when she observed similar issues.

JM: Pragmatic learner. "I think if I hadn't had the assignment I probably would not have grown almost at all in that period of time, specifically, I think I would have been jumping in and not being really sure because it forced me to step back; it showed me a lot more." JM did her teacher research project in a Head Start classroom as a practicum student not employed in the center. This was her first teaching experience other than the prepracticum field hours in previous

early childhood classes. She investigated when, where, and how prosocial behaviors happened in her classroom by collecting photographs, anecdotes, and classroom maps. In both her written report and her interview, she noted that she was surprised to find that the children seemed to do very well prosocially at free-play when teachers were not involved in the play. She went into the practicum with a very open mind, knowing that she had a lot to learn. She found that the teacher research project helped her to learn more about children than she would have if she had not been really paying attention to what was going on in the classroom. In response to my question—How did your teacher research impact the children in your classroom? JM responded,

> I guess maybe with my relationship with the kids, and how I was "reading" them differently. Just noticing specific things that they were doing and saying as being prosocial, whereas before, I might have just said, "Oh isn't that cute?" (JM)

For JM, data collection was both the aspect that stood out for her and the aspect that was initially challenging. In her report she wrote, "I found teacher research to be a little more difficult that I had expected, in that it was not always easy to find time to collect data." However, she took dozens of photographs of the children at play after learning how to juggle collecting data while being engaged in the classroom. JM considered her teacher research to be a success not because of any changes in the classroom or the children, but because of the changes in herself. She concluded that by paying attention to the positive interactions occurring in the classroom she learned more about children and teaching than she could have any other way.

JM sees teacher research as a way to both learn about children and to solve specific problems. She plans to run her own in-home child care program now that she has graduated, and having done this descriptive teacher research project in the practicum, she has already thought about how teacher research can support her work in her own setting.

> I think for a new teacher, especially for me, it was more like learning how different aspects work, like learning how children, how their minds work; how they handle different situational already. (JM)
>
> I think doing what I want to do, having my own in-home (center); it will be really good for when I *have* problems, to try to use it that way. I can see how using it that way would be helpful. (JM)

JM found the pragmatic aspects of teacher research to be the most salient, both in her learning as a student, and in her work as a teacher in the future. She understood how she had learned about teaching as a student teacher, as well as how she will use it in her own classroom now that she has graduated.

DT: Creative learner. "I started getting other ideas. I am very creative, but maybe in a different way. Some people are very creative with art and this and that. I have a lot of ideas; I'm an idea person." DT conducted her teacher research in a half-day preschool program run as a parent-cooperative where there is a different "parent-helper" every day in addition to the center staff. She explored how involving children in cooking activities using fresh fruits and vegetables impacted the willingness of the children to try the foods. She implemented a series of complex cooking activities, such as fresh blueberry muffins, over a period of a month, documenting the results with dozens of photographs and several anecdotes. She found that not only did the children try new foods, but also that they learned about new fruits and vegetables, how to follow a recipe and measure ingredients, and how to use kitchen tools. She also concluded that their confidence grew as they were allowed to participate in what is often considered an adult activity. In her written report she noted, "The more cooking projects I engaged the children in, the more

interested and flexible they became in cooking and using the kitchen tools." She stated in her interview,

> It was really interesting because you read about that in the child psychology, about how they start to build on; I got to see that because with the first cooking project, it was new to some of them and they didn't know. They had seen the measuring cups and had seen some of the cooking tools at home, and yet, they had never really been allowed to use the mixer, and this and that. (DT)

Like some of the other participants, DT found collecting the data to be the most salient part of the teacher research project, but she also found it challenging to collect data and teach at the same time. She concluded that the cooking activities not only prompted children to try more fruits and vegetables, but she was surprised to find how much they learned from them. She not only continued the cooking exploration after the assignment was finished, but she also used the same strategy to pursue another topic that the children had shown interest in—the rocks in the playground.

DT is passionate about introducing new curriculum topics and activities into the program instead of always doing the same thing. She sees teacher research as a way to make innovations in her practice.

> It's like taking a project and getting an idea and trying to see if you can get the children to be able to incorporate it and learn something different that is not in the regular curriculum and try to expand on it and try to teach them something and then documenting it. Trying to observe and analyze all the data and really learn from the whole process and seeing exactly what direction it is going in. (DT)

DT's creative stance was evident as she used her research to enhance the curriculum in her classroom beyond the usual early childhood topics and activities. At the time of her interview, she had already conducted another research project about a different aspect of the curriculum at her school.

In a class discussion after DT presented her teacher research, she commented that her friends who are teachers could not believe that she was doing teacher research in an associate degree program. During her interview, I recounted that statement and asked her if she thinks that is a good thing. She felt very strongly that it is.

> Compared to people that I talk to, and what I show them, not just this class, but even the other classes, it bowls them over. So we definitely have a higher standard; in the ECE field we are just a cut above, like leading the torch. So, maybe that's a good thing because maybe it will raise the bar up for some of the other places. (DT)

JG: Excited learner. "I need to know what materials I have that will help them learn. I picked one thing, number sense, and thought I was going one way, but then everything became number sense. I feel like on a personal note, I accomplished something for myself." JG runs her own full-day family child care program from her home. She has six to eight children aged 2 to 5 in her setting and has a dedicated space set-up as a preschool. She implemented a number sense math kit including several math games, such as teddy bear counters, sea creature counting, and fishing for numbers. She asked the children to help her create the math kit, and found them to be very engaged. In her interview, she spoke excitedly about the impact the math project had on her classroom and the children's learning. In her written report she stated, "Introducing a comprehensive number sense math kit impacted the children's learning opportunities and

engagement in math activities by opening up my mind as to what they could handle learning and what I could teach them." In her interview she said,

> We were doing *way* [emphasis original] more math than I ever imagined, which was great, but it was about organizing the math. We had different things in different places, and putting everything on the table and collecting everything was great for me. It really helped me know what was going to help them learn math by just collecting it all and checking it all out, figuring what worked, what didn't work. (JG)

JG characterized her relationships with the children in her program as collaborative, and often spoke of "we" instead of "I." She likened teacher research to an experiment.

> It was so great to experiment with them. That's what we were calling it. "We are going to have these math experiments. We are going to see what works and what doesn't work." They liked it too. They felt like they were a little bit older. (JG)

JG found that collecting the data to be the aspect of the teacher research project that stood out most for her, and stated that she did not encounter any challenges in doing her research. At the time of the interview, 2 months after the end of the course, JG had already applied the teacher research format she used in the math course to the literacy materials and activities in her program, upgrading the literacy materials and documenting the outcomes using photographs, anecdotes, and discussions with the children in her program. She plans to focus in on the science area next.

> So it's been making me see things differently; how they saw things; and that was great. It's made them think about some things differently, too. It was doable. Besides making me a better teacher, that was the goal, but that was an extra added bonus, a first little baby step. I can do this. It gave me some confidence. (JG)

JG considered teacher research to be an exciting experiment in which she and the children learned how to enhance their own learning.

MH: Willing learner. "I was doing shapes, and even when we were outside, we would be doing something and I would say, 'Oh! That has to do with shapes!' I was thinking all the time, 'How do I do that?'" MH conducted her teacher research in a full-day preschool-age classroom in a multiclassroom program, examining the impact of introducing a math kit focusing on shapes and spatial sense on her program. She introduced several activities to explore shapes throughout her project, including geo-boards, shape bingo, tessellating pattern blocks, making and tracing a flat cityscape with unit blocks, an outdoor game she called "hula hoop jumping," and a spontaneous experiment with tracing shapes with sticks in the play yard. She documented her project with more than two dozen photographs and several anecdotal records. MH found that the children became very engaged in the shape activities, much more than she expected they would.

MH challenged herself, her assumptions, and her practice during her teacher research project. Throughout her written report and interview MH often spoke of herself as a willing learner. In her written report she noted, "The changes of intentional teaching with math have been very positive for the engagement of children and learning in the Preschool One classroom." She expressed this in her interview as well.

> I find that I am much more open to thinking outside of the box and to going out of what I would consider my comfort zone, which has been a very good thing, and certainly I am more apt when I am doing something to go ask somebody else what they think and try to bring in different ideas, which was a hard thing for me to do. (MH)

She took the math course because her director required it, and she began the course with great trepidation about the math aspect of the class. She gained confidence as she implemented and documented the activities and realized how much the children were learning. At the time of the interview almost three months after the end of her project, she was surprised and very pleased that the impact of the project was still very evident in her classroom.

> It was amazing how much they got out of it, even in a relatively short amount of time. Even though they have extended it, for what I thought I was doing, it was a short amount of time that they got a significant amount of learning out of it, and it continued and they are now teaching it to others. (MH)

For MH teacher research came to be about intentionality in teaching, and she welcomed the insight.

> I didn't realize that and that was a good thing for me to figure out; to be specific and intentional about a specific thing and to see how much information you can draw from to explore and create for children is important, and I had not thought about that. I would say intentional teaching is a big part of it. (MH)

Although MH has been an early childhood teacher for almost three decades, she willingly embraced the learning she experienced and adjusted her practice as a result of her research, welcoming the new insights she developed during her research project and planning to use the research to learn more about other areas in her classroom in the future.

AP: Collaborative learner. "I found myself elaborating on it. I have already talked about doing things in the classroom differently. I am trying to think of more ideas and to develop a more exciting area. I am trying to think of other ideas to make it more exciting for the kids. I want to make it more 'meaty.'" AP implemented her teacher research project in a full-day

preschool-age classroom in a multiclassroom program, examining the impact of introducing a math kit focusing on patterns and relations. She connected many of her activities to the theme of ocean life that they were studying at the time of her research. She introduced several activities including a sea shell sorting game, sea shell pattern cards, pop-beads, and sea shell pattern stamps. The children were and continue to be very engaged in the patterns math kit, and AP found that she gained a much better understanding of the state mathematics curriculum guidelines.

Like JG, AP described herself as a colearner with the children in her class, often using "we" instead of "I" when talking about her project.

> We started very basic, and it seemed to extend. We did grow together a lot. It's fun to have that to reflect upon because the kids will come up and want to talk about patterns, and I say, "Oh, you remember that? Let's talk about it!" (AP)

Throughout her written report and interview AP alternated between speaking as a learner and as a teacher, describing what she had learned and then what she did or planned to do with it. In her report, AP said, "I plan on sitting more often to extend play with manipulatives. I will also put more numbers and shapes in the classroom for recognition." In her interview, she talked about several examples of how she altered her practice as a result of her teacher research.

> Although I was doing math activities every day, I was not fully aware of the outcomes it could produce. I found if I was excited, they would be excited also. I learned through this process how to extend play and make a more extensive math program. (AP)

AP found that seeing and listening to her college colleagues' teacher research presentations at the end of the course to be the most valuable aspect of the experience for her. She could extend what she had learned after seeing how other teachers interpreted and

implemented their projects, noting that they were all different. She was challenged by the time it took to do the project, but said that once she got going, it all fell into place.

For AP teacher research is a way to learn and grow with the children in her classroom, and she plans to apply the teacher research strategy to other areas in her classroom, starting with the block area. She experienced her teacher research project as collaboration between her, her coteacher, and the children in her classroom, where everyone learned and continues to learn together.

> We were trying to do new things and they were responding. I was getting excited and they were getting excited, and so we really *bonded* [emphasis original]. We grew in a direction that we wanted to grow in. We grew up instead of just maintaining. (AP)

Emergent Themes

Several themes emerged throughout the participants' stories—the nature and importance of their relationships with the children in their classrooms and their colleagues, the ways in which they consistently questioned their assumptions about how children learn, and their practice with children, and the process of moving from doubt to confidence as they navigated the teacher research projects. There were also similarities in what they found important and what they found challenging about teacher research. Finally, their thoughts about teacher research were unanimously positive based on their experience as teacher researchers.

Relationships. The relationships the teachers talked about most were invariably about the children in their classrooms. These relationships were characterized by two strong aspects of commitment to these children: to teach them and to care for their well-being. Every teacher described their efforts to teach and care for young children during their teacher research projects. Their questions themselves were framed for that purpose and teachers were very aware of how

their research benefitted the children in their classrooms, in their learning or their emotional well-being.

> The kids *still* talk about patterns and how things relate to each other, and the beads; we do the beads on the string now, and they will do orange, yellow, orange, or something of that nature. They still say, "Look at my pattern!" (AP)
>
> Now that we have younger children coming into our class, the older children are helping the younger kids, "No, that's a circle. See, look here." And now they are doing a lot of that, showing the younger children what to do; where they can find shapes. (MH)
>
> I think it is benefitting them. They are happier. There isn't so much arguing. They will talk more; they will socialize more than argue. That's what I am trying to have them do. It's working; that's what I think it's helped with the most. (MT)
>
> I think that it made for a lot less of a stressful day for the girls. I feel like we made them more comfortable and able to cope. There were fewer tantrums, so I think they were having more fun and they were more relaxed in school. They weren't as anxious, they had less anxiety; they are just happier. (HB)

Teachers occasionally talked about their relationships with their center colleagues. These relationships were often collaborative and collegial. Participants who were able to work with their colleagues to implement their teacher research noted the importance of these relationships.

> I talked to my director; I talked to the other teachers, and, quite honestly, my coteacher was quite helpful, too; one little thing would make me think of something else and I would try it next to see if I could get some sort of response. (MH)

> I collaborated with my coworkers; I shared my findings, and I said, "Hey, this is definitely a trigger, different strategies, and this was universal; we *all* did it, we were all on the same page so we weren't setting them off." (HB)

In a few instances, however, this was not the case. These teachers talked about the power differential between them and the other staff, either because they were students or new employees. The participants who could not implement the changes indicated by their teacher research found it frustrating.

> It was awkward being the student teacher, doing an internship there and not being part of the faculty and not being there every day, and having a relationship with them. It was more like I was the toy that came in, you know, to have extra set of hands. So I think that was a big challenge. (DC)

> Yes, it wasn't my classroom. I was more helping out and so I could not change certain things to see if it would work. As far as observing, I don't know what I could fix because I couldn't fix anything. (MT)

Questioning Assumptions and Practice

Participants consistently described many ways in which they had questioned and continue to question and revisit their assumptions about children and teaching and their practice itself. Some of them changed their expectations of how children learn. Some of them changed what they did with children. Some of them changed their classroom environment.

> It is still used every day, and I think we are more in-depth now, about math, because we use it every day but I tend to take it to the next step now. Instead of just saying, "Oh, yes, that's three blocks," now I say, "Oh, yes, that's three blue blocks. Let's add one more, or

let's add a white one and make another pattern." So I try to take it to the next level. (AP, talking about how she changed her practice)

I really didn't realize how much science and math . . . I know when you are older they go together and you need that for formulas and stuff, but It's amazing how much my students can relate to math in the science stuff. It's made them think about some things differently, too. (JG, talking about how much children learned)

I think it caused me to jump in less to what they were doing. Especially being new and not really knowing what I was supposed to be doing; not knowing when to jump in and when not to. (JM, talking about how she learned about interacting with children)

There are only a certain number of children allowed in this area, etc. I have to go according to what the center does, so what I'm doing is I am starting to pull out things from certain areas and putting them in another. So dramatic play now has some cars and things like that, and I am intermixing so the kids can play; if they don't have it in this area, they have it this area. (MT, talking about how she changed her classroom environment)

I have to say that this whole thing made me look at the way that they are looking at things a little differently also. It was, although, and I think I told you this, I wasn't really keen on the idea of doing it; it was real eye-opener to watch them get so much out of it; the things they came up with on their own, like figuring out how to make a circle on the geo-board. (MH, talking about how she changed her assumptions about how children learn)

Aspects That Stood Out

Data collection. Collecting the data, especially the photo-documentation, emerged as the aspect of the teacher research projects that stood out the most for participants. Collectively they

took hundreds of photographs. JM said, "I found the photographs to be the most useful data out of everything; that's why I have a ton!" DT noted, "The documentation; that was very, very neat; the kids liked it too. They always wanted to see all of the pictures; they were really into that."

Reflection. Participants also talked about reflecting on the data as an important component of the projects.

> I really broke it down to why, what was going on, my reflections of how I could help them, even if I was jotting in the journals, this happened today, or they saw mom, or they were going back and forth through foster homes, or whatever, they saw their sister . . . there were so many things that I could reflect upon, besides just "the tantrum of the day." (HB)

Sharing the research in class. The third aspect of the project that stood out for the teachers was sharing the research with each other in class. They felt that they learned a lot from hearing what the others had done in their projects.

> What stood out first was when I reported it to our class and seeing other people's responses to the same project and how *they* presented it, and how *they* incorporated it, and how *they* thought of it in their own mind. It helped to broaden my perspective. (emphasis original; AP)

Challenges of Implementing Teacher Research

The challenges they reported were most often related to not having enough time or figuring out how to both teach and collect data.

> I don't know if I really had a lot of difficulty; maybe finding the time to step away and do data collection. I have a lot, but it was hard to find a way to situate myself where I could watch them all or focus on a specific situation, because they would pop up in the middle

of lunch and I am like, “Oh, well, have to remember this. I can’t exactly write it down.” (JM)

As noted earlier, two of the participants found themselves in a situation where they had ideas about how to improve the classroom but were not in a position to carry out the improvements.

> As far as observing, I don’t know what I could fix because I couldn’t fix anything. In the end, when I wrote this (report), I said I would like to see what would happen if I added certain things to certain areas, mix and match. That was my only frustration; it wasn’t my room. (MT)

Interestingly, all participants reported finding ways to overcome the challenges, even MT, who said that she could not implement her findings in the setting where she did her teacher research, but is implementing them in her current setting a year later.

Doubt to Knowing

Embedded in each interview was an instance where the participant described moving from doubt to knowing within the experience of implementing the teacher research projects.

> I really didn’t understand the whole process because I had never done it before, but once I had all that information in front of me I realized that I really had something to work with there. (DC)

> It’s a big learning experience. It was a lot, kind of overwhelming. “Am I going to be able to do this?” I was a little nervous because I had never done anything like this before, but I think it’s one of the best things that I remember doing in school. (MT)

At first I was really nervous, because the teacher research started when I first started, but then as I was more comfortable there it didn't really bother me to just do what I had to do (laughs). (JM)

Thoughts About Teacher Research

The participants spoke about teacher research in very positive terms. They found it very helpful and worthwhile and felt that other teachers will find it helpful, too. This was consistent across all participants as they talked about teacher research.

Some teachers complain a lot. "Change something! Let's change something. Let's do something different, then. Let's see if it works. If it doesn't, it doesn't. We will try something else." That's the best thing about my coteacher and me. That's the fun part about it. We all learn in the process together, us with the children. We all learn together. That's how we have fun (laughs). (AP)

It would be valuable to them if they are having a situation with a child that they want to improve that they could do the research. I would say it was worth doing and enlightening. It was a good way to find out information. (DC)

I think it's great; it's going to make them a better teacher, all the way around, on the whole spectrum. They are really going to understand child development from all the different stages, too. (DT)

I think that it's a way to tackle something that you want to learn more about and break it down into steps. You think, "I want to do foster care," for example, but you don't know where to begin. I'm going to do classroom maps, I am going to my observations, anecdotal records, my reflection journal; I wouldn't have been as in-depth I don't think. (HB)

Answers to My Research Questions

What happens when early childhood students in a community college conduct teacher research as a course assignment? This study generated several answers to my primary research question, and link to Dewey's (1933, 1938) and Schön's (1987) writing. What follows are the findings and my initial interpretations.

1. All participants exceeded assignment requirements in some way. They all demonstrated what Dewey (1933) describes as whole-heartedness in their approach to the teacher research. They were enthusiastic and engaged in the process.

2. All participants found answers to their questions. Teacher research enabled them all to construct knowledge in a reflective process described by both Dewey (1933) and Schön (1987) of questioning, observing, analyzing, and forming conclusions.

3. All participants spoke as both learners and as teachers. These students built on their learning in a process of continuity of experience as described by Dewey (1938), where each step of the process built on previous steps.

4. All participants spoke about how their research benefitted the children in their setting. They all demonstrated deep commitment to the children in their programs, as well as responsibility for their actions in that they strove to enhance children's learning and well-being.

5. All participants showed evidence of questioning their assumptions or practice. They all demonstrated open-mindedness (Dewey, 1933) in their approach to the teacher research when they considered and implemented new information gained through their research. This also suggests evidence of transformative learning (Cranton, 2006b).

6. All participants expressed a time when they had some doubt that they then overcame. Teacher research enabled them all to construct knowledge through the continuous, reflective process of implementing their research (Cochran-Smith & Lytle, 1993).

What stands out about teacher research for these students? Data collection, reflecting on the data, and sharing their research with others emerged as the most important aspects of the teacher research projects. They all learned through the process of collecting, reflecting on, and sharing data in a process of continuity of experience.

What challenges did they encounter doing teacher research? Most participants reported minor challenges that they overcame. These included time constraints, and not knowing how to do teacher research. Although there are challenges associated with doing teacher research, students found ways to overcome them.

What do they think about teacher research? All participants spoke about teacher research in positive terms. They all saw the benefit of teacher research to themselves and to the children in their classrooms.

Summary

This chapter presented the findings from my study in the format of profiles of individual participants as learners, and a description of their teacher research projects, followed by a discussion of the themes that emerged from the eight stories, using the participant's own words to illustrate the themes.

The answers to the research questions and my initial interpretations were stated and discussed. All eight participants generated useful answers to their teacher research questions. In both their interviews and written reports they each described ways in which they questioned their assumptions about children and teaching, and their practice itself. Each participant also related at

least one point when they experienced doubt about knowing and then moved into the confidence of knowing. They all experienced aspects of the projects that stood out for them, as well as aspects that challenged them. They described teacher research in very positive terms, primarily as a learning experience, and they all described extensively how their teacher research benefitted the children in their classrooms, either in the children's learning or the children's well-being.

There are several questions to now consider. How do these findings relate to the current early childhood teacher research literature? How can we frame and understand the findings within the theoretical frameworks of reflective thinking and practice and the seminal teacher research literature? What are the implications of the findings for the practice of early childhood teacher educators? What are the implications of the findings for future research about teacher research? The following chapter discusses these questions.

Chapter 5: Discussion, Conclusions, and Recommendations

> This definitely got me to open my eyes and say, "Am I doing that? Am I not doing that? Do I have the materials that I need? Are they learning from what I have? Are they not learning?" It did; it made you think about things and experiment. It took it up a notch.
>
> —JG, Talking about teacher research

The findings of this study described in chapter 4 suggest that there are many positive outcomes when community college early childhood education students conduct teacher research as a course assignment. These students become generators of knowledge (Cochran-Smith & Lytle, 1993) who learn how to question their assumptions about and practice with young children. When they talk about their teacher research projects, they speak in two voices—that of a learner and that of a teacher. Their teacher voices are articulate and passionate about their commitment to teaching children and caring for their well-being. These findings leave us with several questions to consider.

1. How do these findings relate to the current early childhood teacher research literature?
2. How can we frame and understand the findings within the theoretical frameworks of reflective thinking, adult learning, and the seminal teacher research literature?
3. What are the implications of the findings for the practice of community college early childhood teacher educators?
4. What are the implications of the findings for future research about teacher research?

Each of these questions will be discussed in chapter 5.

Early Childhood Teacher Research Literature

The findings of this study reflect the salient aspects of the current early childhood teacher research literature, which emphasizes the benefits of teacher research to teachers working in complex systems, including reflective practice and teacher empowerment through the generation of knowledge and the opportunity for teacher voices to be heard (Christianakis, 2008; Crawford & Cornett, 2000; Katz, 2012; Lytle, 2012; Stremmel, 2012). As is the case with other early childhood teacher researchers (Mardell et al., 2012; Neimark, 2012; Spahn, 2012) the participants in this study were very aware of how their teacher research benefitted both them and the children in their classrooms, describing in great detail how much they learned, how much children learned, or how the children's well-being was supported by their projects, such as when MH said, "It was amazing how much they got out of it, even in a relatively short amount of time." The challenges experienced by the participants in this study mirror the challenges described by teacher educators (Hatch, 2012b), such as DC's statement, "It was awkward being the student teacher, doing an internship there and not being part of the faculty and not being there every day," as well as challenges described by in-service teacher researchers (Espiritu et al., 2002) such as difficulty in collecting data while you are teaching. DT said, "I had my camera, and I'm talking, and I am trying to conduct, and I click, (laughs). It was crazy, but we did it. I did like it, but it was challenging, very, very challenging."

Theoretical Frameworks of Teacher Research

Three of Dewey's major constructs can be used to frame the findings of this study—reflective thinking, the attributes of mind that support reflective thinking, and the continuity of experience leading to learning (Dewey, 1933, 1938). Figure 1 models the relationships between the theoretical concepts demonstrated in this study, as the three aspects of Dewey's learning

theory intersect with each other leading to confident knowing. The process that each participant described clearly illustrated reflective thinking (Dewey, 1933, 1938) leading to reflection-in-action (Schon, 1983, 1987). Each step of the process—identifying the problem, trying solutions, systematically observing, and analyzing results—led to reflective practice. Each participant described several examples of when they questioned their assumptions about how children learn, or how they set-up their classroom, or how they interacted with the children. They identified collecting and reflecting on their data as the salient aspects of their teacher research projects.

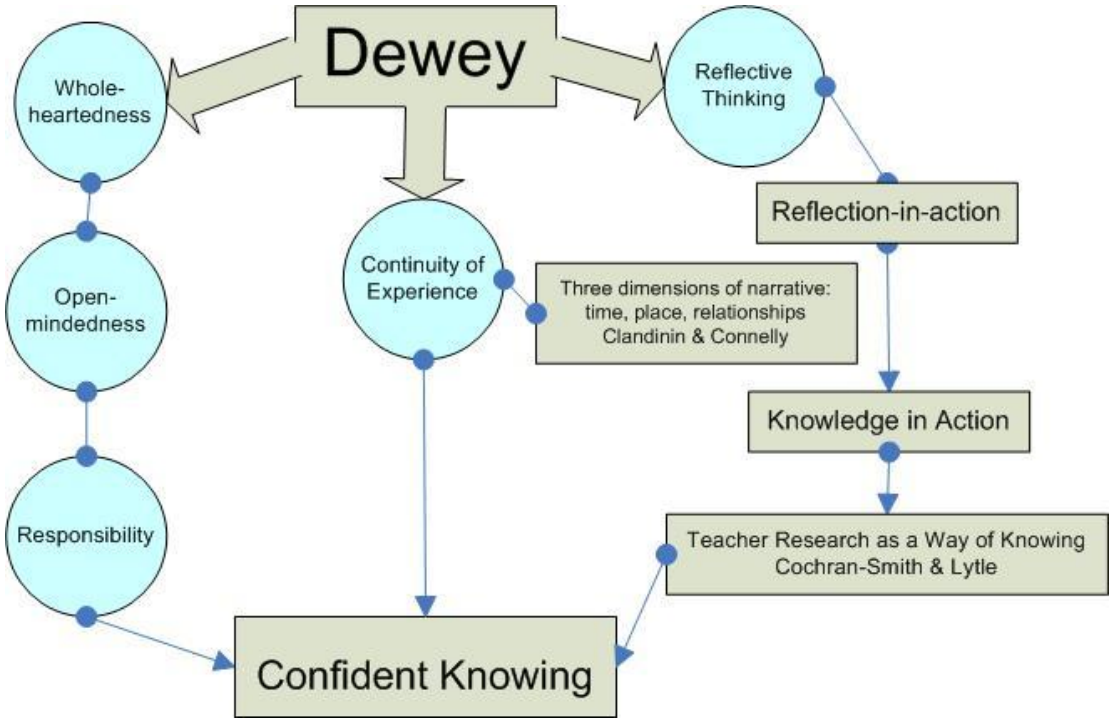


Figure 1. Connecting aspects of Dewey to learning through teacher research.

Dewey (1916, 1933) discussed the importance of specific attitudes that facilitate reflective thought: open-mindedness, whole-heartedness, and responsibility. Open-mindedness is described as the willingness to consider more than one position or point of view. Whole-heartedness refers to giving your focused attention and enthusiasm to the topic at hand.

Responsibility involves being aware of the outcomes of your actions and thinking. These attitudes were in evidence throughout the teacher research projects the participants implemented.

In the process of exploring the literature, I also discovered the connection between narrative inquiry and teacher research (McNiff, 2007; Meier & Stremmel, 2010; Pushor & Clandinin, 2009). In both teacher research and narrative inquiry, teachers tell the story of taking action. This is very helpful as a strategy for understanding the college student's experience of doing teacher research. The literature on narrative inquiry is also illuminating. Clandinin and Connelly (2000a) describe the three dimensional space of narrative inquiry, including time, place, and relationships. The process my students participated in involved students moving through a continuum of 3 months while doing the teacher research project, in their field sites and in the college classroom, with children and their colleagues, including me, at the child care site and in the college class (see Figure 2).

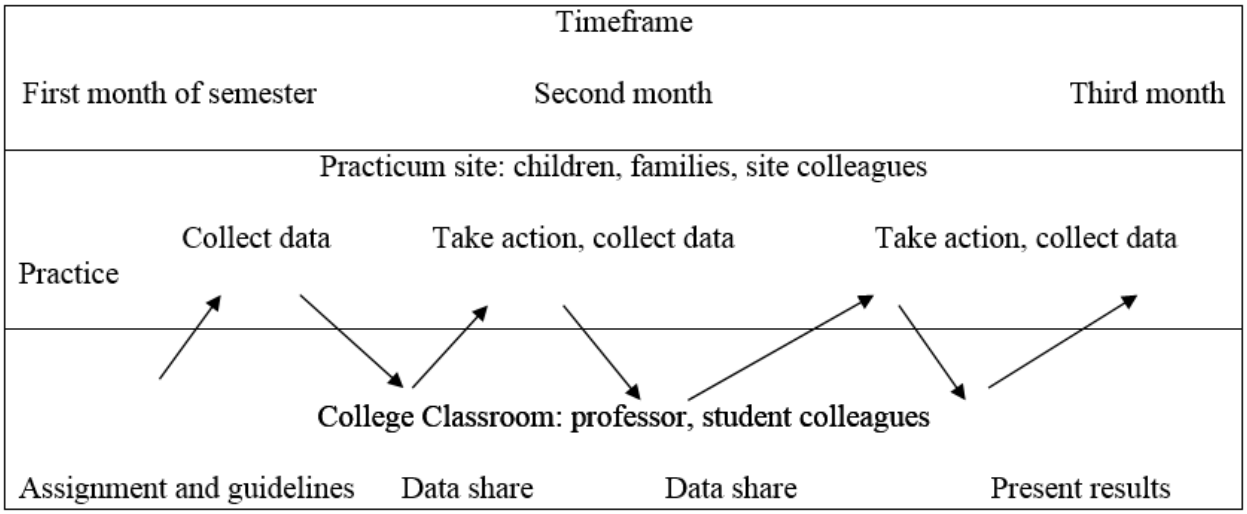


Figure 2. The three dimensions of the student experience conducting teacher research. Students move through time, place, and relationships as they implement their teacher research projects and construct knowledge.

Transformative Learning

Just as teacher research process parallels the steps of reflective thinking and learning, it also includes many of the components of transformative learning. Although transformative learning was first described by Mezirow (1991), the interpretation that most resonates with the results of this study is that of Patricia Cranton (2006b), who states that one of the adult educator's most important roles is to encourage individuation (Cranton, 2000). Individuation moves the student toward increased autonomy and away from unquestioned socially constructed views and assumptions. This is one of the key goals of adult education in this paradigm. In individuation, the student begins to differentiate herself from the social collective, and in the process, and is more likely to examine and question her previously unquestioned beliefs. Once students have a better understanding of who they are and what they believe, they are more able to choose to align themselves with others who have similar beliefs (Cranton, 2000). In the case of teacher education, my goal is to help students individuate and become more critical of their previous experiences as students and as staff in early childhood programs. The teacher research project pushes them to ask - What do *you* believe about children? What kind of teacher do *you* want to be? Although there are no teaching strategies that guarantee transformative learning, a challenging, yet safe, college classroom where students feel a sense of empowerment provides an atmosphere conducive to transformative learning (Cranton, 2002).

Cranton describes seven facets of transformative learning that can inform the practice of teaching adults: (a) creating an activating event, (b) articulating assumptions, (c) critical self-reflection, (d) openness to alternatives, (e) discourse, (f) revision of assumptions and perspectives, and (g) acting on revisions. In this study, the activating event is the teacher research assignment. In the process of conducting their research and in class discussions, they employ the

other facets of transformative learning. The two that are most visible in this study are the participant's openness to alternatives, which corresponds to Dewey's (1933) open-mindedness, and revision of assumptions and perspectives. Teacher research gives students the opportunity to act on the revisions creating a context where this type of transformative learning can occur.

Another important aspect of teaching for transformation is creating authentic relationships between faculty and students (Cranton, 2006a), in fact, Cranton postulates that developing authentic relationships is in itself transformational. A key aspect of authenticity in teaching is the development of relationships where both teacher and learner can be genuine and open. The participants in this study described authentic relationships when they talked about their experiences learning how to conduct teacher research.

> You made it so easy. You are just a very easy person to have as a professor. You are very articulate on what you are, the way you are teaching, but you are also laid back at the same time. I think I was picking up on your vibes. It wasn't like you were a scary professor and I felt intimidated. You were so engaging with us as a class that everybody felt comfortable looking at someone and talking to them. (JG)
>
> I guess probably that some of the students are going to need hand-holding in the beginning. I felt that in the beginning I really didn't know how to do it, but then you were really good about meeting with us, and trying to explain it, and I think that is really important, because if not, you will lose the whole point of the project. (JM)
>
> We can all do it, and it's learning, even if you are getting graded on it. I don't know how many times you told us, "You are learning while you are doing this." It made it a little bit more lax. Because it's not just about what we passed in, but what we got out of it. I think

that's what you were looking for. So once someone understands that it's about what you learn, I think they will be more, "OK." You were very open with it; I loved it. (MT)

Implications for Community College Teacher Education

This study has several implications for the practice of community college early childhood teacher education, including the critical issues of voice and power. Teacher research creates a context in which community college early childhood teacher education students can both make their voices heard and find ways in which they have power within their practice.

Making Voices Visible

To paraphrase an old riddle, "If community college early childhood teacher education students speak and no one is listening, do they have a voice?" My research demonstrates that, indeed, they do. When they talk about children they speak with clear, confident, knowing voices. I did not invent or even discover their voices; I merely listened to them and put them on paper because I think they are worth hearing (Gilligan et al., 2003). Although each participant has her own voice, these voices have much in common.

There is substantial literature about the concept of "voice" (Belenky, Clinchy, Goldberger, & Tarule, 1997; Brown & Gilligan, 1992; Gilligan et al., 2003; Lawrence-Lightfoot & Davis, 1997) and on teacher voice in particular (Carter, 1993; Freeman, 1996; Hargreaves, 1996). Throughout the study I "listened for voice," (Lawrence-Lightfoot & Davis, 1997, p. 99) in the participants' interviews and in their reports. I also struggled to define what I meant by "voice," but I had the distinct sense that I would know it when I heard it. Does doing teacher research help give community college preservice teachers voice? Is it the same voice, or are they different? Carter (1993), Freeman (1996), and Hargreaves (1996) each state that there is, in fact, more than one teacher voice, and that we must listen for the differences as well as the similarities

when considering teacher's words. This study revealed eight individual voices connected by a common thread, what I call "This is what I (now) know," and represents the journey from not-knowing to knowing. This emerged as the most salient aspect of the participant's experience doing teacher research.

The voices that emerged in this study are consistent with constructed knowledge (Belenky et al., 1997). This is knowledge that the participants, themselves, created and they knew it. Each participant stated that she had answered an important question about their own practice. Although it cannot be said that teacher research creates constructed knowers, it seems clear that it can scaffold constructed knowing; where it is understood that there is not only one right answer, where connections are made between prior and current knowledge, and where communicating new knowledge to others is part of the process.

The idea of voice is both implicit and explicit in the teacher research literature. When teachers engage in teacher research, they are giving voice to their questions (Stremmel, 2012). When they make their teacher research public in their schools and beyond, their voices are heard and contribute to our knowledge (Perry, Paley, et al., 2012). Meier and Stremmel (2010) suggest that by writing and talking about their inquiries, teacher researchers can make explicit the knowledge and the insights they have generated, and that this process can result in a shift in identity where they come to see themselves differently as teachers (p. 4).

Rinaldi (2006) describes how looking at visible documentation is a form of listening. Gilligan, Spencer, and Bertch (2003) characterize reading and rereading interview transcripts as a way of listening. In the reverse process, I contend that doing teacher research makes the voices of early childhood community college students visible. Their voices are visible in the data they collect. This tells us what they think is important to pay attention to. Their voices are clearly

visible in the photographs they take, where by their choices of what to photograph they tell us what they have done and how children benefit from their projects. Their voices are visible in their teacher research reports when they describe what they have learned and how it has influenced their practice. But their voices are most visible in their classrooms and in their work with young children.

Power

As I read and reread the participant's interviews I kept thinking about the word "power," and I was reminded of the notion of "mystified concepts," (Minnich, 1990), when meanings of concepts are distorted with the effect of supporting the status quo of the current power structure. *Transforming Knowledge* was the first book I was assigned to read in my doctoral program, and even then, I thought that "power," itself, is a mystified concept, a "masculinized term" (p. 121), with a negative connotation associated with control over others. To demystify the concept of power, we can redefine it to mean quiet power, using our strengths to help people; much like Eleanor Roosevelt did with her status as the President's wife, for example, when she intervened on behalf of Marian Anderson so she could sing on the steps of the Lincoln monument. It is this kind of power in the stories that the teachers in my study told me about the impact of their teacher research projects; the power they had to support the learning and well-being of the young children in their classrooms.

In a follow-up email related to member-checking, I asked the participants if they were the first women in their family to attend college (as I am) and everyone was. In some of the literature this is considered a risk factor, but to me, it was more evidence that these are *strong* women. Was this just my own bias? I was so proud of them; so proud of *us*. Could I find support for this idea in the literature? I found corroboration in the literature about women's learning (Flannery &

Hayes, 2001; Hayes & Flannery, 2002). Poststructural feminist pedagogy asserts that voice and identity are inextricably linked, and that they are not single, well-defined entities, but rather they change for individuals within varying contexts (Hayes, 2002). This is also connected to the power status the learner has within any given context, which can also vary for the same person in different contexts. The participants in this study were neither voiceless nor powerless in the process of conducting their teacher research. Teacher research provides a context in which early childhood community college students can give voice to their knowledge and experience, as well as the children's knowledge and experience, and make use of their power to improve the lives of the children in their classrooms.

Conclusions and Recommendations

The findings of this study have implications for the practice of early childhood associate degree teacher education, and because so many community college early childhood students are already in the field, it also has implications for early childhood in-service professional development. Bloomberg and Volpe (2012) suggest that the qualitative researcher create a chart connecting their findings to conclusions and recommendations. Based on my findings, I have developed the following conclusions and recommendations.

Based on my own experience conducting this study and assigning teacher research in my program, associate degree faculty who decide to include teacher research as course assignment would be well-advised to conduct their own teacher research as they work through the process. Keep field notes, document student data and presentations, and read their teacher research reports for evidence of their voices as learners and their voices as teachers. Look for evidence that they have exceeded the assignment requirements, showing whole-heartedness. Look for evidence that they have questioned their assumptions or practice, demonstrating open-

mindedness. Finally, look for evidence that they have moved from doubt to confident knowing as reflective practitioners.

Implications for Future Research

Although the use of teacher research in associate degree early childhood teacher education is still emerging, more studies in this context are needed to answer the question, *what happens when community college early childhood students conduct teacher research as a course assignment?* This study could serve as a potential model for further research into that question in a variety of associate degree programs using teacher research. A follow-up study could involve the participants of this study to determine the extent to which the changes they reported in their thinking and practice have persisted. Another potential for future research is to find out how teacher research in community college teacher education differs from teacher research in university teacher education, and how it is the same. Still another line of research could be to explore how early childhood teacher research in community college teacher education is similar and differs from teacher research in early childhood in-service teacher professional development.

Revisiting My Initial Assumptions

I began this research with a set of assumptions stated in chapter 1. Were these assumptions confirmed or disconfirmed?

1. Community college early childhood students have the capacity and skills to conduct introductory teacher research projects. All of the participants successfully completed a teacher research project within the framework of a course assignment, finding productive answers to their questions, as well as questioning their assumptions and practice.

2. Community college early childhood students benefit from implementing a teacher research project as a course assignment. All of the participants described substantial benefits for

both their own learning, and for the children in their classroom. This was also evident in their written reports and in their photo-documentation.

3. Although there are some potential problems related to students doing teacher research as a course assignment, these are not significant or insurmountable barriers. Most participants described a challenge that they encountered and subsequently solved. These included time constraints, collecting data while teaching, and not having the authority to act on their findings. Although some of the participants could not immediately implement their findings, no project was completely compromised because of an issue or problem. Every participant stated that she had learned through her research.

4. What former students say about their experience doing teacher research would provide valuable data to inform my understanding of the teacher research assignments from their point of view. The participant interviews yielded very rich data which greatly enhanced my understanding of how they experience teacher research as a course assignment.

Limitations and Trustworthiness

The limitations of this study include the small sample size, which might not even be representative of the students in the program, much less of other programs. Each of the eligible participants in the study had been successful in completing their teacher research projects, which is not always the case. In addition, I, the researcher have a clear bias that teacher research is an important strategy in teacher education, so I needed to be diligent about being open to all data and acknowledging that bias.

This study utilized methods triangulation with multiple data sources, researcher reflection and transparency, peer debriefing and member-checking of individual findings, and thick description to address credibility, transferability, dependability, and confirmability. Another

important aspect of trustworthiness in this study is the nature of the relationship between me, the researcher, and my former students, the participants. Each of these points will be discussed below.

Methods Triangulation

There were three major data sources for this study, interviews, written reports, and photographs of student work, as well as field notes and follow-up queries that supported these major data sources. Findings from each data source were charted and compared in data summary tables. Each source of data supported every other source.

Peer Debriefing

This study employed two peer debriefers, both early childhood associate degree teacher educators who have tried teacher research in their own programs. They read and responded to the findings and discussion chapters of the dissertation. I asked them several questions. Does it seem authentic? Can you imagine your students having a similar experience? What stands out? What could be emphasized more? What could be emphasized less? We communicated both electronically and met once face-to-face. Both peers made helpful suggestions for clarifying the findings and aspects of the discussion to pay more attention to, such as collaboration among the participants with their colleagues and the children in their classrooms. Both peers also stated that the voices of my students resonated with their experience with their own students; they sounded very authentic and familiar.

Member Checking

Participants were invited to respond to drafts of sections of the findings and the discussion. I initially sent each participant the draft of her own profile, and later a draft of the discussion relating to voice and power. I gave them opportunities to respond by email, phone, or

in person, as well as a short, anonymous online survey. The email feedback was very positive in nature. For example, HB wrote: "I am really pleased with your piece that you wrote about me. I thought you portrayed me accurately and my message and emotions were captured!" The online survey questions asked the participants the extent to which their own profile and the discussion of voice and power reflected their own experience conducting teacher research. All participants agreed that their profile "very much" reflected their own experience conducting teacher research. All agreed that the section on voice and power "very much" or "mostly" reflected their own experience conducting teacher research. For example, JG said, "The part that I connected with the most was that I do see myself differently as a teacher."

My Relationship with the Participants

The question about whether or not my participants were influenced by the "interviewer effect" (Denscombe, 2010) is one that I have been asked throughout the study. As I have stated earlier, I believe that my relationship with my current and former students to be one of authenticity (Cranton, 2006a). Because of that, I considered it more likely that the participants would be honest with me about their experience doing teacher research. They all revealed times of doubt and worry in the interviews, and I think it is less likely that they would reveal their vulnerability to a stranger. It is important to remember that I am, in fact, part of each participant's experience in doing teacher research; I am a character in their story. I am also an early childhood educator myself, and I speak the language of early childhood education. With the exception of one participant, I had known them all for at least 2 years, and they had taken two to three courses with me prior to the course in which they did their teacher research. As I discussed in chapter 1, I consider the faculty and the students in our program to be a community of practice (Wenger, 1998) where we are *all* learners and colleagues. Several of the participants made

statements about the relationship between me and the students in the class. This relationship seems to include a component of trust.

All participants spoke easily and made eye contact throughout the interviews. They often laughed and spoke with heartfelt emphasis, especially when they talked about children. I asked them directly about the challenges they encountered while doing their teacher research, and they answered, honestly, that it was hard, but it was worth it. Another indication that they spoke their own minds was that seven out of the eight participants declined using a pseudonym when I asked them to designate one. In the words of one of the participants, "I am proud of what I did. I want my name on it." One of the participants mentioned that she was nervous before we started, so I spoke to her about the member checking and reassured her and then she said she was ready. All of the interviews had the characteristics of a conversation between two people making meaning together (Mishler, 1986; Riessman, 1993) and there is ample evidence that they reflect the authentic thoughts of the participants.

Conclusions and Recommendations

Table 2 shows the conclusions and recommendations from this study.

Table 2

Conclusions and Recommendations

Conclusions	Recommendations
1. Early childhood community college students can become invested in one or more aspects of the teacher research assignment.	1. Consider assigning teacher research to engage your students.
2. Teacher research can lead to reflective thinking and confident knowing in early childhood community college students.	2. Consider assigning teacher research to support reflective thinking and confident knowing in your students.
3. Teacher research can lead to a series of continuous learning experiences for early childhood community college students.	3. Consider assigning teacher research to enhance student learning.
4. Commitment to children is a salient characteristic of early childhood community college students.	4. Consider assigning teacher research to create a strategy where students can act on their commitment to children.
5. Teacher research facilitates an inquiry stance in early childhood community college students.	5. Consider assigning teacher research to support the development of an inquiry stance in your students.
6. Teacher research has some inherent, manageable challenges in an early childhood community college program.	6. Be aware of and prepared to address the potential challenges of teacher research as a course assignment.

Summary

What happens when community college early childhood students conduct teacher research as a course assignment? The findings of this qualitative study of eight former community college early childhood students indicate that there are many positive outcomes benefitting both the college students and the young children in their classrooms. College students become engaged in the teacher research projects and demonstrate many instances of questioning their own assumptions or practice as well as moving from doubt to knowing. Although they encounter challenges conducting the teacher research, they are able to overcome these challenges

to generate knowledge and solutions to their questions. We can understand this process through the lens of Dewey's writing about reflective thinking, educative experiences, and attitudes for thinking as leading to reflective practice and a sense of knowing.

Community college early childhood teachers demonstrate both voice and power within the context of their teacher research projects. This study has implications for both community college early childhood teacher education practice and future research.

I used to worry about how I could possibly teach my students everything that they will need to know about the complex process of working with young children and families. I was drawn to teacher research because it seemed to be a powerful solution to that problem. Today I am quite sure that I can *never* teach them everything that they will need to know, but I *can* teach them this. They will be able to approach their practice with a sense of confidence in their voice, in their power, and in their knowing.

Appendix A: Assignment Guidelines

Teacher Research Planning Form

1. Question:

2. Subquestions (1-3):

3. Data Collection. I will collect the following types of data (at least three):
   a.
   b.
   c.

4. Data analysis. Write a short statement about how you plan to analyze your data.

5. Timeline:

Date(s)
_____ a. Develop Question and subquestions
_____ b. Determine what types of data to collect
_____ c. Write-up Teacher Research Planning Form
_____ d. Inform site and get permission
_____ e. Start action and/or data collection
_____ f. Observe and collect chosen data
_____ g. Bring in data memo for data share
_____ h. Bring in data memo for data share
_____ i. Analyze data
_____ j. Reflections, conclusions, summary
_____ k. Write-up Teacher Research Report Form
_____ l. Report study to class
_____ m. Hand in report

6. Resource(s) you plan to use (minimum one article):

7. Who will you collaborate with on this project?

Teacher Research Report Form

1. Context/setting (include number and ages of children, half or full-day, public or private, Head Start, Family Provider, etc):

2. Question:

a. Subquestion(s)

3. Data collected (Include at least four samples from each category in your report):

a. Data type:

b. Data type:

c. Data type:

4. Data analysis (Briefly describe process):

5. Summary, Reflections, and Conclusions (Write a paragraph about your findings, your thinking about the findings and the conclusions you have reached)

6. Next Steps:

a. In the classroom:

b. In Teacher Research:

c. In your professional development and learning:

7. Resources (attach at least one article that you used to inform your project):

8. Reflection on Teacher Research: Write a few sentences about your experience doing Teacher Research.

Math Project Guidelines

How will introducing a comprehensive _____ [Number Sense, Patterns and Relations, Shapes and Spatial Sense, Measurement] Math Kit (see requirements below) impact children's learning opportunities and engagement in math activities in my classroom?

You will be collecting data from various sources for at least two weeks during the course. Data will include the following:

3 photographs of your Math Kit showing all components in detail

6 (minimum) anecdotal records describing a child or children engaged with your Math Kit (Including date, time, number and ages of child(ren), what children did), 6 (minimum) photographs and/or artifacts of children's work while they were engaged with your Math Kit.

Your final report will include the following:

- Your question
- Your context (type of setting, ages, full or half day, etc)
- Your data
  Your summary and conclusions: How did your changes impact children's engagement and learning?
- Next Steps: What other changes will you consider implementing? How will you involve families in the process?

You will present your kit, data, and conclusions to the class on our final class. Data should be displayed on a presentation board or poster, as well as included in your written report.
You must be present at all of the final presentations to receive full credit for your own presentation.

Math Kit Requirements:

Your Math Kit will focus on one type of math experience, such as number sense. It will include the following: 1 teacher-made game that provides learning opportunities for your topic, 2 sets of commercial manipulatives that provide learning opportunities for your topic, one math book for children about your topic, and 4 detailed activity cards (with directions for each activity) for your kit, including at least three EEC Math Guidelines for each activity.

Appendix B: Interview Protocol

We are going to talk about the teacher research project that you completed as part of the _____ course. Your project was about _____. I am interested in finding out more about what it was like for you to complete this assignment.

Please note that everything we discuss will be confidential and you can choose not to answer any question and/or end the interview at any time. I will send you a draft of the transcript and my initial findings for your feedback and comments.

1. Describe an aspect of the project stands out for you. [Forming the question(s), planning the project, collecting the data, sharing the data in class, reflecting on the data, drawing conclusions, connecting your study to an article or other resource, presenting your findings to the group] Please describe what it was and why.

2. How did you use the findings from your project in your practice?

3. How did your research impact the children in your classroom?

4. Describe any difficulties or challenges when you were conducting your teacher research. How did you address them?

5. If someone asked you to explain teacher research to them, what would you tell them?

6. Describe how you might use teacher research again in your practice. What would make it more likely that you will use teacher research in the future?

7. What advice would you give to a professor at another college who might want to try teacher research with her students?

Thank you. Do you have any questions?

Appendix C: Individualized Interview Questions

JG- You made a remark about majoring in CJ because it didn't require Oral Communication before you presented; then went on to make an engaging and thorough presentation of you teacher research. Can you talk about that?

DC- You mentioned when you presented your teacher research that you thought you hadn't done anything until you laid out your data, and "there it was." Can you talk about that?

DT- You mentioned in class that people had told you that doing teacher research was graduate school level work. Is that positive, negative, both?

MH- Your data/ documentation were exemplary. Can you talk about what motivated you to do so much work?

AP- From reading your report it sounded like both you and the children were learning together. Did it seem that way to you?

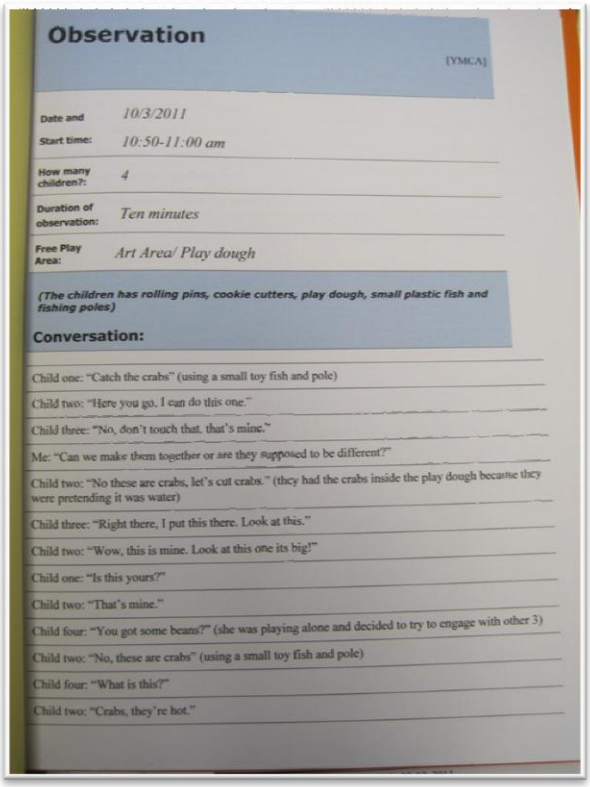
JM- You said in your report that it was harder to do the teacher research than you thought it would be, to find the time, but also that you noticed more positive social interactions than you would have otherwise. Do you think it is worth the effort to make the time?

HB- Your teacher reflections were exemplary. Do you think having done teacher research before in a course made a difference?

MT- You created two very well-designed observation templates for your teacher research project. Can you talk about what motivated you to do that?

Appendix D: Sample Photographs

Figure D1. Student data: MH Artifact of children using block shapes to trace a city.



Observation

[YMCA]

Date and	*10/3/2011*
Start time:	*10:50-11:00 am*
How many children?:	*4*
Duration of observation:	*Ten minutes*
Free Play Area:	*Art Area/ Play dough*

(The children has rolling pins, cookie cutters, play dough, small plastic fish and fishing poles)

Conversation:

Child one: "Catch the crabs" (using a small toy fish and pole)

Child two: "Here you go. I can do this one."

Child three: "No, don't touch that. that's mine."

Me: "Can we make them together or are they supposed to be different?"

Child two: "No these are crabs, let's cut crabs." (they had the crabs inside the play dough because they were pretending it was water)

Child three: "Right there, I put this there. Look at this."

Child two: "Wow, this is mine. Look at this one its big!"

Child one: "Is this yours?"

Child two: "That's mine."

Child four: "You got some beans?" (she was playing alone and decided to try to engage with other 3)

Child two: "No, these are crabs" (using a small toy fish and pole)

Child four: "What is this?"

Child two: "Crabs, they're hot."

Figure D2. Student data: MT Observation form that she created for her teacher research project.

Figure D3. Student data: AP photo-documentation from her patterns project.

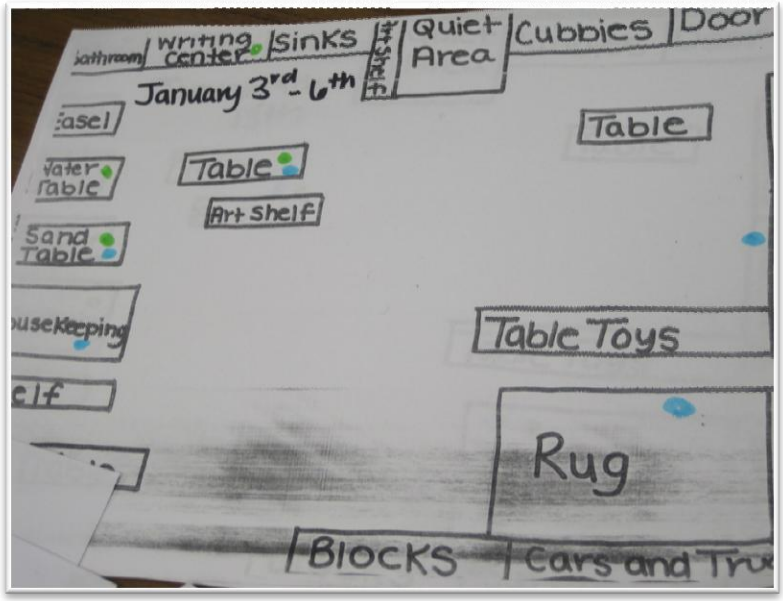


Figure D4. Student data: HB Classroom Map used in her teacher research project about two children in foster care.

Figure D5. Making Teaching Visible: AP displays her patterns activities for a class presentation.

Figure D6. Making Teaching Visible. DT Photographs from cooking projects presented during a data-share session.

Figure D7. Making Learning Visible. MH photograph of children playing a shape game.

Figure D8. Making Learning Visible.MH photograph, child using geo-board to make shapes.

Appendix E: I-Poems

DC

I really didn't understand the whole process because I had never done it before, but once I had all that information in front of me I realized that I really had something to work with there.

I guess reflecting on it. I don't think I really drew any conclusions at this point . . . I kind of knew what was going on at that point. I think it was the reflection that was the big part for me. I actually had some data that I could put together.

I thought maybe the classroom design could be changed, or, and it was funny because you know it changed midway through and then there was different teacher in the morning and then the whole morning was totally different. What could I really *do*?

I did suggest, "Why don't we make some space over by the window so they can look out the window, so they can see their parents leave?" I didn't really have a lot of power in it; control over it.

I tried to be the person to greet, I always made the effort; I mean it really wasn't an effort, I just made sure I made the connection with the kids when they came in; trying to engage them and talk to their parents; and just make people feel welcome.

I just think observing was the easy part. I was trying to find out, "What are they coming from into this classroom?" "What are they bringing with them and how do we meet those needs?" So I think it was difficult to try to get that information from the teachers. I didn't have that information and I was a little uncomfortable asking for that because I didn't know how comfortable they would be with sharing that information with me. I didn't know how they would respond to that.

I basically did the best I could (laughs).

I don't know. I would say I did observations and floor maps, and interviews. I would like to use it, and I don't really know how to approach it, because, you know I work with family child care providers. I am always trying to help them resolve . . . I mean, I think it would be valuable to them, but I don't think that they are motivated.

What I do in my practice is to try to see what I see and then give them feedback. I am there at least twice a month.

I had one who had a little girl . . . I just think this little girl needed more so I brought her information about environment and how a child needs to feel that they can learn something here; that it's a great place to be and there's a lot of stuff going on, but they don't believe in that; they don't want to clean up the mess.

If I knew the steps . . . I know you gave it to us, but I was also working and driving the bus, and I was way overwhelmed and I just kind of did what I needed to focus on this week.

I don't know. I definitely think it was worth doing. I would say it is worth doing and enlightening.

I noticed in class that I was the only who spoke about a negative thing, and I wonder as I am thinking of it now, is it because I want to make things better and they didn't maybe have that depth of, I don't know . . . they didn't have the experience to know that they could make something better and they were just looking at what was working. I don't know.

I certainly have a lot to learn.

I felt that in the classroom I wasn't part of all of the conversations. I wanted to get to know what was going on and see if there was anything I could do or offer.

That was such a crazy situation. . . . And *I don't like that*. That's what I don't like about centers. I think it makes it more challenging. I really liked the Lead Teacher but I think that she didn't have the support. I think she did great, but there were a lot of things for her to learn; she expected them to sit in a circle and I didn't think that was developmentally appropriate.

DT

I have to say that the thing that stood out most for me was the thing that I fear, which is speaking in front of class. I had a ball with the data, really being able to watch the children immerse themselves in the whole project and to be able to actually watch them conduct that actual process of putting everything together. I loved it when they got to each step and said, "We are going to do this." I got to see that because it was the first cooking project.
I thought that was pretty neat. I could see how we could really integrate it into the school and make it more of the curriculum, but it takes a lot of work. I was funding a lot of this kind of stuff.

One thing I liked was when we were putting all the fruits together. I thought that was interesting that you could do like a whole color study, but also add in this fruit . . . I don't know, it was kind of interesting.

I really enjoyed the whole process.

I've got to say I think it would have been beefed up more if I had someone there to help. I felt like I had my camera, I am trying to conduct, and I like, "Click!" I did like it, but it was challenging, very, very challenging.

We did continue but now I left the school and I know that it will not happen. I was able to continue that for the rest of the year, and the kids liked it.

I have quite a few friends that are teachers and first of all, they were flabbergasted that I was even doing this. "OK, if I am going to do something like this I need to scale it down or scale it up." That's what I told everybody.

I think it's really good. I really did learn a lot.

I tell a lot of young girls what's involved, I showed them some of my books; trying to inspire girls.

I even told the teacher that I am with now, she said, "I give you all the credit in the world, because what they have you doing; I cannot get over it."

I don't really know if I am going to get a chance to do it here in the public school setting as a paraprofessional. But I think I can see myself in the director's position one day when I get more experience and I feel more confident; I would definitely like to do this type of thing.

I am very creative, but maybe in a different way. I have a lot of ideas; I'm an idea person.

I would probably say, "Yes, you can do it." I would want to be like, "This is what I would do." Pick my brain, and I will tell you what I know.

I just loved all the little steps. I forget what they call it . . . scaffolding; I was really interested in that. I learned from it, the children learned from it, and it's definitely beneficial for the classroom.

HB

It made me take time to sit down . . . what I was trying to work as my goal. Not only was I facing this trauma with the twins, but also I have never been in foster care. I found triggers and positive reinforcement, and strategies to help the girls cope throughout the day. By using my different data collections I learned the dos and don'ts and I implemented that in the daily schedule, in the every day, what we did every day.

I collaborated with my coworkers; I shared my findings, and I said, "Hey, this is definitely a trigger," different strategies, and this was universal; we all did it; and I was doing the brunt of the work. I would say, "Try this! I documented that it worked so just do it!"

I think that it made for a less stressful day for the girls. I feel like we made them more comfortable and able to cope. I think it made the girls less upset. I think they were having more fun.
I think teacher research is a great tool for educators. I think that it is a way to tackle something. I would have done the online research, but I wouldn't have broken it down as much as I did. "I am going to do classroom maps; I am going to do observations." I wouldn't have been as in-depth, I don't think.

I think seeing the benefits of teacher research makes you want to do it. I think the more you see it as being a positive, the more you will do it. I like the group. I think it is more beneficial than just doing it for yourself.

I would offer it up like you did. I would incorporate into a class that I was teaching.

I did the literacy and I did the prosocial, but this hit home. This was a problem and it made really sad about the girls, so I think when I reflected, I was really going deep and I tried to see what they were seeing and deal with what they were dealing with.

I really broke it down to why, what was going on, my reflections of how I could help them, even if I was jotting in the journals. It made me think about everything as a whole when I was reflecting.

I would write down what worked and what didn't work, so that was my little memory thing of what was going on, instead of just anecdotal. I said, "This is what I did today, and this is what happened.

MH

Planning the project was . . . I thought it was easy, but I found it a little more difficult. I have to think "outside the box," which is really hard for me, sometimes because I am in a groove about something; so when I have plan intentional things within the classroom, knowing I was focusing on . . . we are going to do this for the class project was probably what stood out the most for me. I had to think a lot more (laughs).

I *had* to think outside of the box as opposed to what we do every day. I was doing shapes, and how even when were outside, we would be doing something and I would say, "Oh! That has to do with shapes." I was thinking all the time, "How do I do that?" for art, so it made me think more about that.

I think it was a very good thing. I find that I am much more open to thinking outside of the box and to going out of what I would consider my comfort zone, which has been a very good thing, and certainly I am more apt when I am doing something to go ask somebody else what they think and try to bring in different ideas, which was a hard thing for me to do.

I had more awareness of where everybody was at and what their strengths were, and who I could go to if I needed help with something.
I would say together we have worked really hard to add more math.

I think that because we were working more on intentional stuff that they were able to absorb more. I would not have expected that.

I didn't think that by doing it that they would keep it as long as they did, either.

I figured that this was just a passing thing, but because we have been trying to continue it, it has really kept up, and they are just on their own saying and doing it.

I've been doing it for a while, and I have never seen that.

I had challenges in figuring out what I was going to do (laughs) because that was like hitting a wall for me. I talked to my director; I talked to the other teachers, and, quite honestly, my coteacher was quite helpful, too.

I need to think about things, and watch things, and then talk about it with other people to make sure that what I am thinking is along the right track.

I think it is because I had never really thought about intentional teaching until this class. I was thinking that everything you do is intentional, but it's not. But I didn't realize that and that was a good thing for me to figure out; to be specific and intentional about a specific thing and to see how much information you can draw from to explore and create for children is important, and I had not thought about that. I would say intentional teaching is big part of it.

I was sitting at rest time and Amber and I were talking about what we would change in the block area. I think it will be important to take another area to do that. I think it will if I stick right to it so I can make sure that I am hitting the things I want to change. I need to follow it so that I can . . . "OK. I am doing this, this, and this." I do better with things like that.

I need to start with a question. That helps, because for me answering the question is easier to do. I would say that it is a very good idea.

I just happened to be taking a picture of her, and then I said to her, "Can you draw a circle?" Then she did it and that started a whole thing of the kids drawing, so I started taking more pictures. I would forget to sit down and listen sometimes. I kept thinking I should have a tape recorder. I would walk into conversations; I happened to walk by and they were talking about it, so I sat down to talk with them. I started taking more pictures. I do it every day.

I have to say that this whole thing made me look at the way that they are looking at things a little differently also.

I wasn't really keen on the idea of doing it; it was real eye-opener to watch them get so much out of it.

I think without documenting it knowing that I needed to do this, I wouldn't have noticed it; I would have taken it more as play, as opposed to, not that it's work for them, but learning work for them.

I definitely paid more attention to that because of this. I think that for me it was amazing how much they got out of it, even in a relatively short amount of time.

JG

The thing that I liked most was collecting the data. I liked it because it made me organize some things in the classroom. I liked that also because there were so many different things that we use every day that I didn't really necessarily think of when I first started this class. We were doing *way* more than I ever imagined.

I said, "I need your help." I really like that, making it a group project.

Some things I realized we don't need. I need to know what materials I have that are going to help them learn. I think the things that they don't like, they aren't going to learn. Asking them made it clear to me how I could teach them. It brought something out different than I normally would have done.

I picked one thing, number sense, and thought I was going one way, but then everything became number sense. I had said to them, "I am working on a math project." That was the best way I could explain it.

I went to a meeting and said, "You have to have everyone sign up!" The knowledge I gained taking this class . . . it was doable. I feel like on a personal note, I accomplished something for myself. I can do this!

I really do a lot of things. I have a math schedule up there (points). I do four different activities with them every day.

That's how I would describe it, experimenting with kids. I enjoyed it. This definitely got me to open up my eyes and say, "Am I doing that? Am I not doing that? Do I have the materials I need? Are they *learning* from what I have? Are they not learning?" I think we were feeding off each other's vibes.

I had to look for those math books, which I didn't realize that I actually didn't have a lot of math books. I had only a couple. I just did the math thing; it made me go back to the things I learned from the month before and reorganize like I did in your class. "What kind of literature am I using?" Again, I looked up at my schedule and changed it. I put nursery rhymes at the bottom. I thought, "I just took the whole day with Francie." Why don't I look back and use the same steps you had, but instead of math, I put in literature. I could do that for every subject.

I really liked how you said right away that we weren't restricted with what we were doing with them.

I would hope that other professors were like you and let them do whatever comes natural to you with the kids and figure out what works for you and what works for them.

I can say this to you now because I already have my grade so I am not trying to kiss up to you (laughs) . . . I won't forget you were sitting on a desk and your legs were swinging back and forth, and I was like, "OK. She seems laid back and this isn't going to be where we have to sit prim and proper."

I am more comfortable with myself as a person than I was back then. I was nervous, but I went.

I knew that no one here is going to judge me, even though I knew I was being graded, it didn't really feel like it. It felt like I was talking to all my colleagues.

MT

I think from this project itself I remember that I started it as something a little bit less . . . it was kind of broader than what it was. The more I did observations I noticed the more the questions started to come up. I think putting it together and then having subquestions was the biggest learning because I ended up having to flip a couple of questions because the data I found was so interesting.

I think what I found out after I did it was my biggest accomplishment, because I use it now, still. I remember thinking, "What am I going to ask?" After I started the observations I said, "OK, now I know *exactly* what I am going to ask." I had the general question, but the direct questions came up when I started observing.

I have the after school now, and where I work they have the limitations on the areas.
I have to go according to what the center does, so what I'm doing is I am starting to pull out things from certain areas and putting them in another.

I have blocks and table blocks, the same exact blocks, but I have them in a plastic bin now, so they are table blocks and they can play with them on the table as well.

I am starting to integrate certain areas so they will fit, just so that there isn't the whole argument with the limitation.

I haven't tried it with the younger group yet, but I know these older kids, it is working with them. I don't like that number thing; I understand why they want it limited, but I don't think the kids . . . So now I say, "Let's pull it out."

I have choices for them.

I have the pictures, even with the older kids because they forget. And I am still working; I am still learning; I am still using this. I have to say, I am still using it. I know it is going to help my other teachers because they have limits, too. I have been telling one of my TA's, she is actually a TA in a 3 year-old room now and she has started it there, so it will eventually start to spread throughout the whole center eventually.

I have a long table where they eat and do regular stuff at; they bring it out. So I let them.

I couldn't before, it wasn't my class. Now that this is my class, I can do it and say, "Oh, look at this." It's working; it's working, so I think that it will involve that whole number thing; if other

teachers start doing it and putting a little bit out, so if the kids want to play with the cars and the dolls, they have that there.

I have to show you a picture! They have these square blocks; I put them; dolls, I put them.

I am trying; I am trying. I learned from it. I got to see it.

I think they benefit because they don't fight about where they want to be anymore. I have four kids in there with disabilities even with those kids, I found that . . . there is one especially who likes to throw a lot when he doesn't get what he wants; so even with him, I have duplicate toys.

I am still doing it; I am still trying to find it, but the more I do with it, the more it's helping them.

I like for them to be able to express themselves. I made the mistake in art area of limiting certain things they could use and they were starting to get bored.

I can collect things for projects later on, but the more that they have, the more they create.

I had someone make a boat out of it; they put sails and everything; another one made a beach and I let them put sand and they made crabs out of scraps, scraps of stuff. It was so cool.

I am trying to make it easier for them to have fun; I can't stress it enough; this was a big thing.

I was more helping out and so I could not change certain things to see if it would work. As far as observing, I don't know what I could fix because I couldn't fix anything. In the end, when I wrote this report, I said I would like to see what would happen if I added certain things to certain areas. But it's OK because I get to do it now. I was like a nobody. I have to administer meetings, so I can use it now.

It was a lot, kind of overwhelming. "Am I going to be able to do this?" I was a little nervous because I had never done anything like this before, but I think it is one of the best things that I remember doing in school. I'm serious. I like to learn, maybe that's why. It was so . . . what is the word I am looking for? Enlightening? I think a lot of people should do it. I think we should be doing it in our practice, period.

I am doing team meetings, too, and we discuss things in the classroom that have issues, so this is something that I can use also. I have to administer the meetings, so I can use it now. I am trying. I am trying to change things. I left; I got the degree; I came back, so now I am going to pass it on.

I am a paperwork person. I love paperwork. I like doing this kind of stuff. I do it at the center. I think that's my niche. I am redoing both websites. I just did a 15 minute video. I think that's why I wanted to go back there. I had unfinished business. I enrolled for my Bachelors online. I am not stopping. I am not stopping. Now I am doing a flyer for the school. I told her, "I don't mind doing this stuff." I miss school. I'm going to show you. I've done this stuff that they didn't have before.

AP

When I reported it to our class; I am a very visual person.
I respond more to seeing other people's ideas.
I liked seeing everybody's results so I can actually use that also.
I like to see what other people's ideas; how I could use in my area.

I tend to take it to the next step now. I say, "Oh, yes, that's three blue blocks

I try to take it to the next level. I didn't expect them to go as far as they did.

I let them look at it.

I would have liked to make more games for the kids. The game that I made was more of a

memory matching game; I would have liked to have made a board game.

I would tell somebody that you need to be ready to work for this class

I found myself elaborating on it.
I have already talked about doing things in the classroom differently.
I am trying to think of more ideas and to develop a more exciting area and not just coloring.
I am trying to think of other ideas to make it more exciting for the kids.
I want to make it more "meaty."
I feel like our curriculum was good, but I see some areas where it needs to be better.

I am a visual person.

I had been a director for a while, out of the classroom.
I would be more than happy to take another class. I would love to do that.

I was getting excited and they were getting excited.

JM

I learned more when I was collecting the data than at any other time; because I was thinking about right then. I took a *ton* of photographs. So, I focused on it while I was doing it.

I guess maybe with my relationship with the kids and how I was "reading" them.
I might have just been, "Oh, isn't that cute?
I think it was more of how I *understood* children, because this was the first time I ever really worked with them.

I think it made me jump in less to what they were doing. I think it forced me to step back and to know that the situation is going to be fine. I was observing, so I didn't want to step in anyway, but had I not been observing, I might have stepped in quicker and might never have known that they will be fine, giving them the opportunity to figure it out. I am even noticing it this year with the newer kids.

I don't know if I really had a lot of difficulty; maybe finding the time to do data collection. I have a lot, but it was hard to find a way to situate myself where I could watch them all.
I think at first I was really nervous, because the teacher research started the same time as the class, but then as I was more comfortable there it didn't really bother me to just do what I had to do (laughs). I wasn't really sure where I was supposed to fit in right away; when I was able to do what I had to do for school, when I was doing something for them; because I am nervous about everything.

I think for a new teacher, especially for me, it was more like learning how different aspects work. I think if I hadn't had the assignment I probably would not have grown almost at all in that period of time, specifically, I think I would have been jumping in and not being really sure because it forced me to step back; it showed me a lot more.

I think doing what I want to do, having my own in-home center; it will be really good when I *have* problems, to try to use it that way. I can see how using it that way would be helpful.

I definitely already can think of the situation, because we are buying a house, and the basement where I want to have the majority of the day, it's not really big, so I think it is going to be a learning curve trying to figure out how to set stuff up so that they . . . at most I can only have six kids, but trying to give them enough room to feel like they are not all crowded.

I have already been thinking, "I am definitely going to have to use this!" because I am going to have to try to figure out what is going to work for them, what's working, what's too small, what needs to be totally gone.

I felt that in the beginning I really didn't know how to do it, but then you were really good about meeting with us, and trying to explain it, and I think that is really important, because if not, you will lose the whole point of the project.

I think it is something that, even though I am not in school, it is still helpful; even the specific question I did is still helpful, especially with newer students coming in.

Appendix F: Photograph List

#	Participant	Content	Code	Comments
1	MH	Children and teacher playing shape bingo	MTV	"Cover your shape."
2	MH	Child using peg board	MLV	"I can make 4 squares!"
3	MH	Children and teacher playing triangle, circle, square	MTV	
4	MH	Children drawing with sticks	MLV	
5	MH	Hula-hoop hopping	MLV	
6	MH	Children making block skyline	MLV	
7	MH	Artifact-skyline	MLV	
8	JG	Math Kit components	MTV	
9	JG	Math books	MTV	
10	JG	Children playing number fish game	MLV	
11	JG	Children using Unifix cubes to measure	MLV	
12	JG	Children counting beads	MLV	
13	JG	Children counting sea creatures	MLV	
14	JG	Children playing counting bears game	MLV	
15	JM	Children playing outside	MLV	
16	JM	Observations of children playing outside	MLV	
17	JM	Children playing outside	MLV	
18	JM	Children playing inside	MLV	
19	JM	Children playing inside	MLV	
20	MT	Articles supporting research	Teacher as learner	
21	MT	Raw observation data	Children in free play; initiative	Created own observation templates
22	MT	Final presentation observation data	Children in free play; initiative	Created own observation templates
23	MT	Final presentation observation data	Children in free play	Created own observation templates; initiative
24	DT	Fruit set up for cooking	MTV	Documented entire process, MTR,

#	Participant	Content	Code	Comments
				initiative
25	DT	Child sifting flour	MLV	(same as above)
26	DT	Child stirring batter	MLV	(same as above)
27	DT	Child scooping batter	MLV	(same as above)
28	DT	Child scooping flour	MLV	(same as above)
29	DT	Cooking project set up	MTV	(same as above)
30	DT	Muffins at the end	MLV	(same as above)
31	HB	Classroom Map		Designed own maps; initiative
32	HB	Anecdotal Observations	MTV; MLV	
33	HB	Journal reflection	MLV	In-depth→ initiative
34	HB	Artifact- children's writing	MTV; MLV	
35	HB	Children in positive experience	MLV	
36	HB	Children in positive experience	MLV	
37	HB	Children in positive experience	MLV	
38	DC	Classroom Map		
39	DC	Anecdotes		
40	DC	Classroom Map		
41	DC	Anecdotes		
42	AP	Pattern activity card	MTV	Connects to report
43	AP	Patterns math kit	MTV	
44	AP	Child playing pattern game	MLV	
45	AP	Child playing pattern game	MLV	
50	AP	Artifact- pattern strip	MLV	

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