An Analysis of Directors' Views on Educational Technology Professional Development in 21st Century Community Learning Center Programs

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ABSTRACT

L. DANIELE BRADSHAW: An Analysis of Directors' Views on Educational Technology Professional Development in 21st Century Community Learning Center Programs
(Under the direction of Dr. Cheryl Bolick)

The purpose of this study was to examine directors' views on the current state and needs of 2009-2010 North Carolina 21st Century Community Learning Center (21st CCLC) afterschool educational technology professional development (ETPD). The population for this study involved the 2009-2010 North Carolina 21st CCLC directors. In a mixed methods study approach, the information from qualitative exploratory interviews was used to refine a 21st CCLC ETPD survey. Qualitative exploratory interviews were conducted with 13 directors. The survey provided descriptive statistical data on directors' educational technology and ETPD practices and needs. A total of 47 out of 90 directors completed the survey, for a completion rate of 52.2%. Donald Ely's (Ely, 1990, 1999) eight conditions of implementation (dissatisfaction with the status quo, adequate time, knowledge and skills, resources, rewards and incentives, participation, commitment, leadership) were used to evaluate directors' interview and survey responses on 21st CCLC ETPD.

Through the qualitative interviews and the survey, directors provided insights and recommendations for 21st CCLC afterschool ETPD. The interview and survey results supported the implications of Ely's conditions for implementation of educational technology and ETPD innovations. Findings indicated a wide variety of educational technology and ETPD usage. The study findings also suggested that directors valued ETPD and desired

expanded ETPD options. Implementation conditions that helped 21st CCLC leaders in facilitating ETPD were described: (1) establishing coordinated ETPD training times, (2) addressing staff fatigue, (3) offering regional, local, and site-based ETPD, (4) seeking additional funding for expanded ETPD options, (5) providing information on evaluating and designing afterschool ETPD resources, (6) offering ETPD rewards and incentives to staff, (7) facilitating staff participation, (8) using the support of 21st CCLC officials, and (9) supporting director leadership in ETPD. ETPD should be afterschool specific and geared to the 21st CCLC context. Also, knowledge of Ely's eight conditions that facilitate 21st CCLC ETPD is important for implementation.

(Keywords: 21st CCLC, afterschool, educational technology professional development, implementation)

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CHAPTER I

INTRODUCTION

This study used mixed methods research to examine directors' views on 21st Century Community Learning Center (21st CCLC) educational technology professional development (ETPD) implementation. Qualitative exploratory interviews and a descriptive survey were used to gather data on directors' ETPD views. This chapter is organized in the following sections: (1) overview of 21st CCLC programs, (2) statement of the problem, (3) purpose of study, (4) theoretical framework, (5) research questions, and (6) definitions.

Overview of 21st CCLC Programs

The 21st CCLC program is the only federal funding initiative dedicated to afterschool programs. From 1997 to 2001, the U.S. Department of Education (USDOE) developed and implemented the national 21st CCLC program. In 1998, 21st CCLC programs were formally established when President Clinton awarded $40 million in new grants to 98 communities. These programs were designed to offer tutoring, drug and violence prevention counseling, supervised recreation, music education, technology education programs and other services (USDOE, 1998).

The 21st CCLC program was reauthorized by Title IV, Part B, of the No Child Left Behind (NCLB) Act of 2001. With this reauthorization, grant administration was transferred from the USDOE to the state education agencies (Afterschool Alliance, n.d.;

Naftzger, Kaufman, Margolin, & Ali, 2006). However, the USDOE retained federal program oversight. Under the NCLB statute, the program purposes were stated, as listed below:

1. Provide opportunities for academic enrichment, including providing tutorial services to help students (particularly students in high-poverty areas and those who attend low-performing schools) meet state and local student performance standards in core academic subjects such as reading and mathematics;
2. Offer students a broad array of additional services, programs, and activities, such as youth development activities, drug and violence prevention programs, counseling programs, art, music, and recreation programs, technology education programs, and character education programs, that are designed to reinforce and complement the regular academic program of participating students;
3. Offer families of students served by community learning centers opportunities for literacy and related educational development (USDOE, 2003, p. 5).

21st CCLC programs have guidelines for locations and funding usage. 21st CCLC grant funds are for local education agencies (LEAs), schools, faith-based organizations, and community-based organizations. 21st CCLC programs can be located at school sites or other accessible facilities. Funding is allocated to each state based on its share of Title I funding, for low-income students. Individual site programs are funded for a maximum of five years. Many 21st CCLC facilities are located within public schools. This helps in providing students with assistance linked to their classroom needs (USDOE, 2000a, p. 5).

Since the initial implementation, the 21st CCLC program has expanded. Since administration of the grants was transferred to the states, most states have made four or more rounds of new grants. The federal 21st CCLC funding allocation has increased to $1.16 billion dollars (amount appropriated for fiscal year 2010) (Afterschool Alliance, n.d.). 21st CCLC programs are currently in all 50 states, plus the Bureau of Indian Affairs, Puerto Rico, and Guam. Since 2001, more than 14,000 centers have been supported with 21st CCLC funds (Naftzger, Vinson, Bonney, Murphy, & Kaufman, 2009).

The North Carolina (NC) state 21st CCLC programs are the focus of this dissertation. NC 21st CCLC programs are administered by the North Carolina Department of Public Instruction (NCDPI), under the auspices of the USDOE. NCDPI is responsible for statewide site administration. The NC 21st CCLC sites are primarily afterschool programs, although some of the sites may offer an additional before-school component, Saturday Academy, or summer enrichment program. Program sites are usually organized by county. Counties can have several 21st CCLC program sites. Each program site usually has a director, site coordinators (especially if the program has multiple sites within it), and teachers.

The NC 21st CCLC sites have specific student entrance criteria. The programs are available for kindergarten through twelfth grade (K-12) students. Students in these programs have not met state proficiency standards. NCDPI states that 21st CCLC should serve students who have scored at Levels I and II on the End of Grade Testing (scores range from a low of Level I to a high of Level IV). NC 21st CCLC sites also assist students in low-performing, high priority, and Title I schools (Public Schools of North Carolina, n.d.).

Statement of the Problem

The USDOE and NCDPI state that educational technology and professional development should be an important part of 21st CCLC sites. This is expressed in the USDOE 21st CCLC Non-Regulatory Guidance Form and the NCDPI website (USDOE, 2003; Public Schools of North Carolina, n.d.). According to the USDOE, professional development is also important for quality 21st CCLC sites. 21st CCLC grant applicants have to specify how they will implement strategies for technical assistance and training (USDOE, 2003, p. 12).

However, ETPD is an essential factor for promoting educational technology usage (Darling-Hammond, 1997; King, 2003; Ringstaff & Kelley, 2002). Sivin-Kachala and Bialo (2000) reviewed 311 studies of technology use; they concluded that teacher training/professional development significantly influences effective use of educational technology. ETPD spurs technology integration into curriculum and instruction (Cradler, McNabb, Freeman, & Burchett, 2002).

This study is important because it addresses a major underestimated factor in 21st CCLC use of educational technology: ETPD implementation. Guidelines for 21st CCLC ETPD implementation are needed for programs. It is difficult to find literature that addresses 21st CCLC ETPD implementation. ETPD is not a major focus area in the NCDPI annual program reports. There is a void in the research literature about ETPD implementation factors that are specific for the 21st CCLC afterschool setting. Therefore, ETPD needs to be examined in the 21st CCLC context. The directors in this study provide this 21st CCLC ETPD information.

Purpose of Study

This mixed methods study describes 21st Century Community Learning Center (21st CCLC) directors' views on ETPD implementation in the programs. Directors' views are addressed using in-depth qualitative exploratory interviews and a descriptive survey. The interviews and the survey provide director insights and recommendations for 21st CCLC afterschool ETPD. This study also contributes to the ETPD knowledge base, by providing new information on this under-researched topic. The study findings also inform afterschool ETPD practices.

21st CCLC directors can provide valuable information on ETPD implementation in 21st CCLC afterschool programs. Directors play a significant leadership role in 21st CCLC activities. The director's job description is based on each program's grant application. However, directors are in charge of the program funding, professional development opportunities, teacher hiring, site programming, supply orders, and many other tasks. Therefore, they have valuable information on ETPD implementation principles in 21st CCLC afterschool.

Theoretical Framework

The term *implementation* refers to the process of introducing an innovation into an organization and fostering its use (Ely, 1990, 1999; Fullan, 1982). Donald P. Ely's (1990; 1999) conditions of implementation serve as the framework for this study. Ely discusses the development of eight conditions that facilitate implementation. The eight conditions include: (1) dissatisfaction with the status quo, (2) adequate time, (3) adequate resources, (4) knowledge and skills, (5) rewards or incentives, (6) participation, (7) commitment, and (8) leadership (Ely, 1990, 1999; Surry & Ensminger, 2003).

Ely developed these conditions after carefully studying facilitative conditions for change (Chilshom & Ely, 1976). He also drew upon his experience as a consultant/change agent. Ely also gathered more supporting data from the general literature on educational change, including research of technological change processes in education. The eight conditions appear to facilitate the implementation of educational technology in a variety of education-related contexts. These eight conditions apply to both process/administrative

innovations and technological innovations. By addressing these eight conditions, there is a greater opportunity for successful innovation implementation (Ely, 1990, 1999; Surry & Ensminger, 2003).

Ely cautions that these eight conditions should be evaluated in the context of specific settings. The North Carolina 21st CCLC programs have specific ETPD implementation needs. Ely's conditions serve as guidelines to examine the various aspects of 21st CCLC ETPD implementation. Therefore, Ely's conditions are beneficial to this study.

Research Questions

The questions that framed this research are as follows:

1. What are thirteen 21st CCLC directors' views on the current state and needs of ETPD implementation in their sites?
    a. How can these views inform the creation of a statewide 21st CCLC ETPD survey for all North Carolina 21st CCLC directors?
2. According to North Carolina 21st CCLC directors, what is the current state (and needs) of ETPD implementation in 21st CCLC sites (as determined by a statewide survey that was informed by the results of the 13 qualitative director interviews)?

The first research question was addressed with the qualitative exploratory interviews of 13 directors. The second research question used an online quantitative survey. The survey included themes that emerged from the in-depth exploratory interviews. The survey provided additional information on the 21st CCLC ETPD factors that were identified by the interviewed directors. The survey information provided more statewide director data on 21st CCLC ETPD.

Definitions

The following definitions refer to some terms that are used in this dissertation. *Afterschool programming* refers to a wide variety of programs that serve students of different ages. This can include academic, recreational, arts, and youth development programs. *Educational technology* is technology-related hardware and/or software, used for academic instruction. *Educational technology professional development*, or *ETPD*, is training for the use of educational technology. *Professional development* refers to training and all related materials for the purpose of sharing educational information. This can include using workshops, consultants, on-line classes, etc. *Smartboards/Promethean Boards* are K-12 recognized brand names for interactive whiteboards. The devices are linked to a computer and digital projector. These devices are operated by touch, or with a digital pen or stylus. They are used instead of traditional boards or video media systems in the K-12 classroom (Becta, 2003).

CHAPTER II

LITERATURE REVIEW

NC 21st CCLC afterschool programs serve an academic and enrichment role for students. According to the USDOE and NCDPI, educational technology is viewed as an important part of this academic and enrichment role. However, ETPD is vital for educational technology usage. There is a need for research and information on ETPD implementation principles for the NC 21st CCLC afterschool programs. This chapter is organized in the following sections: (1) afterschool programming and 21st CCLC, (2) educational technology usage, (3) obstacles to educational technology implementation, (4) influences on educational technology implementation, (5) educational technology implementation in afterschool, (6) professional development, (7) obstacles to professional development implementation, (8) educational technology professional development (ETPD) implementation, (9) ETPD implementation in afterschool settings, (10) evaluating 21st CCLC ETPD with Ely's eight conditions of implementation, and (11) importance of this study.

Afterschool Programming and 21st CCLC

Afterschool programs enhance students' lives by offering academic support, recreation, or cultural enrichment activities. Students gain support for learning and development, via tutoring or mentoring services. Afterschool programs also offer benefits such as collaboration, socialization, and attention. Afterschool programming supervises children who would most likely be alone at home. Afterschool programming can also

promote the following: better peer relations and emotional adjustment; more academic opportunities; less TV watching; lower incidences of drug-use, violence, and pregnancy; lower suspension rates; and lower dropout rates (Department of Education, University of California at Irvine, 2002; Durlak & Weissberg, 2007; Eccles & Gootman, 2002; Gauvain & Borthwick-Duffy, 2007; Green & Schneider, 1990; Lauer, Akiba, Wilkerson, Apthorp, Snow, & Martin-Glenn, 2006; Life Before After-school Programs, 2002; Mastrofski & Keeter, 1999; Miller, 2003; National Dropout Prevention Center/Network [NDPC/N], 2009; Posner & Vandell, 1999; USDOE, 2000a; USDOE & United States Department of Justice, 2000; United States Department of Health and Human Services, 2007). Quality afterschool programs reduce costs related to education (remediation services and grade repetition), crime, and welfare. As a cost-benefit analysis, every dollar invested in afterschool saves in later costs on negative impacts such as grade retention and future incarceration (Brown, Frates, Rudge, & Tradewell, 2002).

Research provides insight on the success of the 21st CCLC programs. 21st CCLC programs showed student improvements in reading grades, math grades, test scores, homework completion, and class participation. 21st CCLC programs with greater attendance rates had student data that showed greater improvements (Naftzger, et al., 2009). According to the Promising Afterschool Programs Study, students benefited from afterschool programming. This study examined 3,000 low-income, ethnically diverse elementary and middle school students. Students who regularly attended high-quality programs (including 21st CCLC sites) over two years demonstrated gains in standardized math test scores, compared to their peers who were not in the program (Afterschool Alliance, 2008). Los Angeles' BEST program was funded in part by 21st CCLC. The

BEST elementary school participants improved their regular school day attendance and reported higher educational aspirations. Additionally, the BEST participants were less likely to drop out of school and less likely to participate in criminal activities compared to matched nonparticipants (Afterschool Alliance, 2008; Huang, La Torre, Duong, Perez Huber, Leon, & Oh, 2009). The University of Florida conducted a study on the state's 21st CCLC programs; the programs were deemed to be effective in improving students' academic performance, attendance, discipline and behaviors (Afterschool Alliance, 2007). A study of New England 21st CCLC-funded afterschool programs compared 21st CCLC students to students in other types of afterschool care. The study found that 21st CCLC students had significantly higher reading achievement and were rated by teachers as being more success-oriented (Afterschool Alliance, 2007; Mahoney, Lord, & Carryl, 2005).

Educational Technology Usage

Educational technology includes computer technology and software used in an educational setting, to enhance the learning process. According to the Association for Educational Communications and Technology (AECT), educational technology involves the "study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" (Januszewski & Molenda, 2008, p. 1). The North Carolina Educational Technology Plan defines educational technology as "a tool that helps every teacher and every student master basic skills and develop critical thinking and problem-solving abilities" (North Carolina Department of Public Instruction, Division of Instructional Technology, 2006, p. 2).

Educational technology involves a wide range of applications and programs. Educational technology includes learning tools such as drill and practice technology programs, calculators, educational games, databases, WebQuests, digital cameras, Smartboards/Promethean Boards, tutorials, word processing/writing, Palmtops, PDAs, cell phones, digital cameras, etc. Students interact over the Web using text messaging, voice over Internet protocol (VOIP) communications, and videoconferencing. Online media, such as digital music, video, and online news, are used for educational purposes. Students and teachers are also Internet content creators, using media such as digital photographs, videos, and web pages. Educational technology also includes *Web 2.0* technologies, or Web environments where participants both access and create content: wikis, Weblogs (Blogs), microblogs (Twitter), social networking environments (MySpace, Facebook, etc.) and virtual worlds/simulations (Second Life). Educational technology also involves using technology for the assessment of student learning (Berson, 1996; Berson & Balyta, 2004; Lemke, Coughlin, & Reifsneider, 2009; Martorella, 1997; Merryfield, 2000; Saye & Brush, 1999; State Educational Technology Directors Association [SETDA], 2010). Educational technology has achieved greater miniaturization and power with the use of laptops and supercomputers.

Educational technology assists in the learning process, if certain principles guide integration. Technology is a tool for inquiry, which can be used to cultivate academic independence. Students need to understand technology in the larger societal context, by examining the relationships among science, technology, and society. Technology should be used to create authentic learning experiences for students. For example, tools like simulations extend learning, providing an experience that goes beyond textbook knowledge.

Technology is useful for providing multiple perspectives. Students should learn about how technology (such as campaign websites, blogging, etc.) can foster democratic participation. Building on prior student interest enhances technology use. Teachers should use technology to provide students with timely feedback on evaluations and assessments. Teachers should participate in the research and evaluation of technology (Bolick, Berson, Coutts, & Heinecke, 2003; Doolittle & Hicks, 2003; Mason, Berson, Diem, Hicks, Lee, & Dralle, 2000). According to research on cognition, educational technology practices should incorporate scaffolded learning, which promotes student understanding of information in an orderly, progressive fashion (Bransford, Brown, & Cocking, 2000; Donovan & Bransford, 2005; Mayer, 1996; Piaget, 1977). Bull, Bell, Mason, and Garofalo (2002) developed the Technology in Schools framework. According to this framework, technology can be used to promote efficiency, or it can be used to reconceptualize the class curriculum, via comprehensive reform.

There are societal influences that are promoting educational technology usage. Ubiquitous computing, or the extensive use of educational technology in many different academic contexts, is popular (Bull, Bull, Garofalo, & Harris, 2002; Bull & Garofalo, 2006; Van Hover, Berson, Bolick, & Swan, 2006; Whitworth, Swan, & Berson, 2002). This emphasis on ubiquitous educational technology is spurred by societal influences, such as: globalization, new technology capabilities, an information based society, and educational accountability with data-driven decision making (Ito & Horst, 2008; Martorella, 1997; Milken Exchange on Educational Technology & ISTE, 1999). Addressing the social realities, the International Society for Technology in Education (ISTE) detail national educational technology standards (NETS) for students. These focus more on 21st century

technology skills and expertise, instead of a tool-based approach. The NETS include: creativity and innovation; communication and collaboration; research and information fluency; critical thinking, problem solving, and decision making; digital citizenship; and technology operations and concepts (ISTE-NETS, 2007). Lemke, Coughlin, Thadani, and Martin (2003), along with the North Central Regional Educational Laboratory (NCREL), describe 21st century skills that can be facilitated by educational technology: digital age literacy, which encompasses basic, scientific, economic, and technological literacies; visual and information literacies; multicultural literacy; and global awareness.

Research supports educational technology to promote student achievement. White, Ringstaff, and Kelley (2002) reported that curriculum integration of computer technology enhances student achievement. They also found that well equipped media centers and media specialists had a positive effect on student reading comprehension standardized test scores. Sivin-Kachala and Bialo (2000) reviewed 311 research studies on educational technology's effect on student achievement. Their findings showed that technology-rich environments promoted significant subject area gains and achievement in all subject areas and improved student attitudes toward learning. O'Dwyer, Russell, Bebell, and Tucker-Seeley (2005) found that even after controlling for socioeconomic level and prior academic achievement, fourth-grade students with greater school technology use (for editing papers) tended to have higher English/language arts test scores and higher writing scores for the Massachusetts Comprehensive Assessment System (MCAS) English/Language Arts test. Boster, Meyer, Roberto, and Inge (2002) examined the use of standards-based video clips into classroom

lessons. This study involved more than 1,400 elementary and middle school students in three Virginia school districts. Compared to students who received traditional instruction, the results showed an increase in learning for students who received the video clip lessons.

Obstacles to Educational Technology Implementation

Obstacles with educational technology use need to be considered. Educational technology use is hampered by unrealistic expectations for teachers, incorrect beliefs about student responses to technology, and poorly designed assignments. Educational technology can be used to maintain existing classroom practices of drill and practice and memorization. This includes a focus on basic applications such as word processing and email (Anderson & Becker, 2001; Berson, 1996; Cuban, 2001; Cuban, Kirkpatrick, & Peck, 2001; Morrison & Lowther, 2002; Tally 2007). Educational technology use is also affected by limited numbers of school computers, inadequate guidance for computer usage, and lower teacher skill level (Levin, Arafeh, Lenhart, & Rainie, 2002). Many educational settings have expensive technology equipment that is not used well, due to poor teacher training (Oppenheimer, 2003).

Student learning needs must be considered in educational technology use. It is important to ask about potential trade-offs in using technology. Schools may promote technology, which may place less importance on traditional tasks such as book research skills. By focusing on technology, schools may de-emphasize other methods of instruction or academic subjects, such as Socratic discussions or music education (Berson, 1996; Oppenheimer, 2003). Unstructured and uninformed research using technology may

jeopardize a student's knowledge base. Without adequate critical thinking and analytical skills, students may use technology to learn dubious material, exercise mental passivity, or engage in aimless Internet navigation (Berson & Balyta, 2004).

Systemic changes are necessary for educational technology use. According to many researchers, educators and administrators underestimate the need for systemic changes that are required to use educational technology. In many settings, the lack of access to reliable, up-to-date technology is a major barrier to educational technology use. In settings with sufficient access (e.g., low student-to-computer ratios), the barriers to educational technology use are due to lack of the following: vision, access to research, leadership, teacher technology proficiency, professional development, progressive school culture, and/or adequate resources (Lemke, et al., 2009). Several misconceptions of the necessary systemic changes also hamper educational technology usage. Many educators and administrators are confident that school changes will take place to promote the educational technology. However, this is usually a difficult or slow process. There is a lack of effort in documenting how technology affects teacher practices, student learning, and school structure. Therefore, it is difficult to gain a true picture of educational technology integration. Many schools are not using the interactive properties of Web 2.0, which could promote collaborative work for student engagement. The rate of technology change affects staff time, professional development, budgets, software upgrades, and curricular design. However, the rate of technology change is usually underestimated. As a result of all these misconceptions, the potential of educational technology remains largely unrealized in schools and learning settings (Lemke, et al., 2009).

Influences on Educational Technology Implementation

There are various models of integration that account for educational technology usage in educational settings. These models need to be considered in any discussion of educational technology issues. Zhao and Frank (2003) focus on the *ecology*, or the environmental issues with technology integration. Educational technology innovations that differ greatly from existing practices and school culture are the least likely to succeed. Therefore, supportive environments are important for successful technology sage. Zhao and Cziko (2001) use perceptual control theory (PCT) to account for technology usage differences. Teacher technology usage is influenced by the goals of teachers and how technology use relates to their perceived goals. From a PCT perspective, three beliefs are necessary for teachers to use technology: (1) technology can more effectively meet a higher level goal than what has been used, (2) using technology will not cause disturbances to other higher level goals, and (3) there are sufficient resources and support. Frank, Zhao, and Boreman (2004) use social network theory to account for social influences on technology adoption and usage by teachers. With this theory, social interaction impacts teachers' perceptions of technology. Teachers learn from experts and colleagues, which influences the teacher's views and actual integration of technology. Under this theory, technology change agents should pay attention to social views that affect educational technology implementation.

Educational Technology Implementation in Afterschool

Educational technology is a vehicle for promoting student learning and mastery of academic material, in afterschool. Educational technology assists in afterschool education,

training, and subject development (Box, 2006; Gauvain & Borthwick-Duffy, 2007; Pearlman, 2006; Schwarz & Stolow, 2006). Therefore, educational technology should be integrated into afterschool programming.

Afterschool students benefit from educational technology usage. According to Hall and Israel (2004), afterschool programs are an important venue for technology experiences because "the youth that have the least technology opportunities are the same youth most often served by out-of-school time programs" (p. 8). Technology-enriched instruction can build the self esteem of academically challenged students, who may have difficulties in a regular school setting (Fryer, 2005; Waxman, Padron, & Arnold, 2001; Wesley, 2004). For youth in the 21st century, technology aptitude is essential knowledge. Afterschool programs allow youth to gain technology expertise (Wimer, Hull, & Bouffard, 2006).

There are four primary approaches that supplemental programs like afterschool use for technology usage. In the first approach, afterschool programs use software packages for educational remediation and skill building. Technology is used to help participating youth with remediation of academic deficits or enhancement of academic skills. This is done primarily through the use of specially designed educational software. As an example, Washington DC's 21st CCLC uses two software programs, one for reading skills and one for math skills. Fifth Dimension is another program devoted to academic preparedness of California youth. Fifth Dimension uses computer games and software (such as the Carmen San Diego and Magic School Bus series) for academic skills.

In the second approach, afterschool programs integrate technology and multimedia into project-based learning. This approach involves using a diverse array of multimedia tools (such as computer games, websites, and digital video) to enhance participants' learning.

Project-based learning activities are commonly used. In the Discovery Youth program at the San Jose Children's Museum, older youth use multimedia technology to create health education materials for the younger participants. The South Bay Project is a collaboration effort of San Diego school and community institutions. Afterschool services are provided to youth in low-performing San Diego schools. The South Bay participants learn about computer programming to create computer games, electronic portfolios, and Web pages.

In the third approach, programs create community technology centers. Programs install centers with technological resources and related peripherals. For example, the Boys & Girls Clubs of America's Project Connect provides centers with an array of technological resources. These include computers with Microsoft software, Internet access, technical support and training, etc. The Intel Computer Clubhouse Network is an initiative that creates community technology centers. Community centers receive resources such as 3-D imaging software, digital video tools, and music recording equipment. The goal is to provide underserved youth with increased access to technology.

In the fourth approach, afterschool programs provide technology-focused mentoring and career development opportunities. Youth are allowed to explore technology-focused programming. This approach is designed to stimulate interest in science, engineering, and technology-related careers. For example, the Minority Pre-Engineering Mentor Program pairs students in relationships with mentoring adults who are successful in technology careers (Wimer, et al., 2006, pp. 2-3).

Professional Development

Professional development assists with effective staff preparation. Professional development consists of training and preparation for in-service teachers. Professional

development can use the following approaches: the standard workshop, common planning periods, extended teacher calendar days, banked time, extended day sessions, substitutes, online training, afterschool sessions, work days, resource centers, National Board certification, university collaborations, communities of practice, etc. Professional development can also take place online, with videoconferencing or online modules (Birmingham, Pechman, Russell, & Mielke, 2005; Darling-Hammond, 1997, 1999; Darling-Hammond & McLaughlin, 1995).

Professional development has best practice principles, for effectiveness. Professional development should promote discussion, opportunities for reflection, and multiple teaching methods. Professional development should also encourage self-efficacy, by allowing teachers to select topics that are relevant to their professional goals (Dadds, 2001; Darling-Hammond & McLaughlin, 1995; King & Newmann, 2000; Lieberman, 1994; McLaughlin & Zarrow, 2001; Villega-Reimers, 2003). Critical thinking is an important aspect of professional development (Berson, 1996; Berson, 2000). Teachers need a collaborative environment for professional development. Collaboration can be facilitated by small interactive groups, with members working together to use and evaluate technological tools (Dewey, 1910; John & Wheeler, 2008; McLaughlin, 1994; Mundry, 2005). Teachers should be encouraged to link the information to their students' needs, in a student-centered approach that promotes technology integration (Darling-Hammond, 1999; O'Dwyer, Russell, & Bebell, 2004; Public Schools of North Carolina, 2005; Ravitz, Becker, & Wong, 2000). Professional development should be sustained, intensive, and ongoing. Long-term professional development helps teachers to combine curricula with technology (Becker, 1999a, 1999b; USDOE, 2004; Wetzel, 2001a, 2001b; Wetzel, Zambo, Buss, & Padgett,

2001). Professional associations and partnering with colleagues increase educational technology usage (Becker & Riel, 2000; Joyce & Showers, 2002). Professional development activities should be developed with extensive participation of teachers, principals, parents and administrators (Darling-Hammond, 1997; USDOE, 2004). Professional development programs need live and mediated demonstration of modeling of new skills and teaching models/research (Darling-Hammond, 1997; Joyce & Showers, 1980, 1988). Professional development should be aligned with district goals for student performance (Corcoran, 1995; Joyce & Showers, 1988). Follow-up technical assistance is needed for effective professional development (Barnett, 2002).

Professional development effectiveness is measured in different ways. School data, student test scores, open feedback, teacher surveys, etc. may all be included for evaluation (Kirkpatrick, 1994). Teacher satisfaction is viewed as an important guide for effectiveness (Killion, 2002). In this time of standards and teacher/school accountability, the effectiveness of professional development is also linked to changes in student test scores (Guskey, 2000; Killeen, Monk, & Plecki, 2002). Professional development effectiveness should be driven by results and based on increases in teacher knowledge, changes in classroom practice, and addition to student learning (National Staff Development Council, 2001; USDOE, 2000b).

Research reflects the importance of professional development. A review of studies on professional development found that teachers who received substantive professional development (an average of 49 hours) had students whose academic achievement scores increased (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). The National Staff Development Council found that collaborative professional development workshops was a factor in enhancing student achievement at eight public schools (WestEd, 2000). For teachers in the

Eisenhower Professional Development program, professional development increased the teachers' uses of specific strategies (USDOE, 2000b). Sustained, coherent professional development made a difference in teacher instructional practices (Byrk, Newmann, & Nagoaka, 2001). The American Educational Research Association (AERA, 2005), in a literature review on professional development, noted that linking the curriculum to the professional development techniques increased the chances of usage. Increased student achievement was also linked to effective professional development. In a professional development analysis, Mid-continent Research for Education and Learning (McREL, 2005) reported that standards-based professional development had a positive effect on students and the practices in the classroom. Kennedy (1998) found that professional development programs had a great effect on student learning, when the programs were geared towards a very specific topic. Wenglinsky (2000) noted that students have higher math test scores with teachers who have engaged in professional development.

Obstacles to Professional Development Implementation

There are obstacles in implementing professional development. Teachers may not be interested in implementing systematic change. They may be burdened by current teaching demands and resent additional input on their classroom practices (Fine, 1994). In many schools, ongoing professional development is seen as a big disruption to the regular schedule. With the focus on standards and accountability, schools and teachers are pressed for time and resources. Professional development has a cost in resources, funds, and time (Killeen, et al., 2002). Therefore, major changes to the schedule for professional development may have a dubious benefit. Parents may not agree with amending schedules, changing school calendars, or adding teacher workdays for professional development. Principals and administrators may

not see extended professional development as the best use of time and money, with the costs of consultants, training packages/software, and substitutes. Some believe that teachers should use their unpaid time for professional development, just as many non-teachers do (North Central Regional Educational Laboratory [NCREL], 2000). Professional development usually consists of singular in-service workshops, with an outside consultant or expert. There is usually a singular training on a subject area topic. This model has been criticized as not having continuity or coherence. The singular training is fragmented, imposed, and usually lacks follow-up (Borko, 2004; Darling-Hammond & McLaughlin, 1995; Little, 1994). Pink (1989) emphasizes the district/central office role in professional development failures. Professional development usually lacks sustained central office support and follow-through, due to an emphasis on quick-fix solutions. Also, in implementing professional development, central office officials do not account for site-specific differences. This leads to incompatibility between the educational project and existing organizational structures.

Educational Technology Professional Development (ETPD) Implementation

ETPD is a major factor for increasing educational technology use, in terms of both knowledge acquisition and skills development enabled by technology. Professional development promotes greater use of educational technology (Barnett, 2003; Carlson & Gadio, 2002; Darling-Hammond, 1997; Goodson & Mangan, 1991; Grove, Strudler, & Odell, 2004; King, 2003; Ringstaff & Kelley, 2002; Van Hover, et al., 2006; Williams & Kingham, 1999; Willis & Raines, 2001). The U.S. Department of Education (2005) released the National Education Technology Plan, which emphasizes the importance of professional development in fostering educational technology. Sivin-Kachala & Bialo (2000), in a review

of over 300 studies of technology use, concluded that teacher training/professional development is the most significant factor that influences educational technology use. Teachers have the most student contact and daily curriculum control; therefore, professional development allows teachers to learn information that can be passed directly to students (American Federation of Teachers, 1996; Cradler, et al., 2002; Killion, 2002; National Commission on Teaching and America's Future, 1996; Speck & Knipe, 2001). Thus, educational technology professional development (ETPD) is important to promote teacher proficiency in technology integration.

There are obstacles to ETPD implementation. Many professional development sessions focus on the mechanics of educational technology, in a tool-based approach. However, with educational technology, a tool based professional development approach has limited benefits. Technology changes rapidly. A tool based approach may become obsolete, because it lacks a broader connection to educational goals and curricula (Berson & Balyta, 2004; White, Ringstaff, & Kelley, 2002). Educational technology usage is more than mechanical tool skill acquisition; content, context, pedagogy, and technology properties are all important considerations for ETPD (American Federation of Teachers, 1996; John & Wheeler, 2008; Kleiman, 2000; Koehler, Mishra, Hershey, & Peruski, 2004; National Staff Development Council, 2001; Zhao, 2003). In addition to the mechanics of the technology, ETPD should also consider teacher attitudes on technology, implementation difficulties, teachers' abilities to change, and planning issues (Strehle, Whatley, Kurz, & Hausfather, 2001).

Several research studies noted the role of ETPD in increasing student achievement. Wenglinsky (1998) examined the effects of using simulations and educational software, with a national sample of fourth graders and eighth graders on the National Assessment of Educational Progress (NAEP). Teacher ETPD was associated with student scores that consistently rose above grade level. Wenglinsky's (2006) research continued for each following administration of NAEP assessments, and the findings were confirmed each time. Some of the earliest research in ETPD was conducted by Apple, Inc, with Apple Classrooms of Tomorrow (ACOT). Research outcomes showed that technology could positively impact student learning. ETPD was vital to promoting teacher comfort with technology integration (Baker, Gearhart, & Herman, 1994; Sandholtz, Ringstaff, & Dwyer, 1996, 1997). In the public midwestern schools in the Nash (1994) study, ETPD staff development was related to greater student use of microcomputers.

ETPD Implementation in Afterschool Settings

Many of the program improvement approaches in the afterschool field emphasize the importance of professional development. The quality of center staffing is a crucial factor in the success of afterschool programming. Professional development enhances afterschool program delivery, by improving the staff quality (Vandell, Reisner, Brown, Dadisman, Pierce, & Lee, 2005).

Afterschool settings have specific needs with providing ETPD. Hall and Israel (2004) state that "out-of-school time program settings can resemble, both in environment and content, in-school settings" (p. 8). However, afterschool programs are different in function

from regular school, due to the following: mixed-age groups, small-group learning, flexible schedules, and frequent opportunities for real-world activities (Hall & Israel, 2004; Heath & Dick, n.d., pp. 20–22).

Certain characteristics of the afterschool setting present challenges for ETPD. Afterschool programs face two major staffing challenges: continual turnover and poor opportunities for professional development/training (Raley, Grossman, & Walker, 2005). The nature of the afterschool job is usually characterized by low wages and high turnover. Many afterschool workers work in part-time positions, which can affect professional development motivation. These factors can also affect the incentives for site programs to provide ETPD opportunities. Afterschool care is seen as supplemental or interim work, so there is usually a lack of identity as a profession. Studies of afterschool programs identify staff turnover as one of the main challenges. Turnover is especially an obstacle with staff members (Halpern, Spielberger, & Robb, 2001). Often, there is limited funding for salaries, which results in low wages and reliance on part-time and temporary positions. Volunteers may serve a large role in program delivery and services. Some staff members eventually seek full-time, higher-paying jobs; this can produce disappointed youth and additional burdens on remaining staff. Afterschool providers may vary greatly in age, prior experience, or educational background. These factors may make it difficult to offer professional development that adequately meets each staff member's needs. As a result, the afterschool staff members may have different concepts of professional development goals (United States Department of Health and Human Services, 2007, pp. 5–6). Afterschool programming does not have a set identity as a field. Many afterschool programs have a wide range of offerings, including educational and recreational programs. This also makes it hard for leaders to

design targeted professional development. Even when professional development is available, two afterschool challenges remain: paying for the training and scheduling convenient session times. Afterschool staff providers often work only a few hours a week. Therefore, incorporating everyone's schedules for professional development is challenging. These afterschool obstacles have negative impacts on ETPD.

Many afterschool directors address these challenges in order to offer professional development, including ETPD. To address scheduling challenges, program directors reserve staff in-service days. Some directors schedule training meetings in one-on-one sessions. Others directors reserve days to hold group professional development. Program directors increasingly integrate staff development as a part of day-to-day practice, using formal mentorship, informal coaching or modeling. New staff members may be invited to observe high-quality staff in action and work collaboratively to implement activities. Some directors encourage intentional learning communities. With these communities, all staff craft learning goals for themselves and students. Staff meetings are used to gauge progress, share thoughts, and practice role-playing. Most afterschool programs incorporate informal staff evaluations, which promote self-reflection and program examination. Staff members are often asked to offer suggestions for the programs (Raley, et al., 2005).

Evaluating 21st CCLC ETPD with Ely's Eight Conditions of Implementation

Everett Rogers' (1995) Innovation Decision Process Model shows that innovation adoption is a diffusion process that occurs over time. Potential adopters go through five stages when interacting with an innovation. The first stage is *knowledge*. Potential adopters learn about an innovation and how it works. In the second stage, *persuasion*, potential adopters create a positive or negative view of the innovation. In the third stage, *decision*,

potential adopters decide whether the innovation is accepted or rejected. The fourth stage, *implementation*, refers to the stage when the innovation is used. During the fifth stage of *confirmation*, the adopter seeks innovation information. Then, the adopter chooses to discontinue or continue innovation use. This *confirmation* stage might also involve the adoption of a previously rejected innovation (Rogers, 1995, Surry & Ely, 2001).

Innovation research trends are shifting from a focus on adoption (the initial decision to use an innovation) to examining implementation. Implementation is the use of an innovation in practice. Implementation deals with the process and content of programs, ideas, activities, policies, and structures for innovation adoption (Fullan, 1996). Implementation principles should be examined as part of a comprehensive and systematic change plan from the beginning, even in the adoption phase. As the diffusion process moves along, the actual use or implementation of an innovation in a specific setting becomes more important (Rogers, 1995; Surry & Ely, 2001).

Donald Ely's research on instructional innovation addresses the issue of implementation. Ely discusses the development of eight conditions that facilitate implementation. These diffusion conditions can apply to process/administrative innovations and technological innovations. By addressing these eight diffusion factors, the opportunity for implementation increases.

Dissatisfaction with the status quo is the first condition. Dissatisfaction with the status quo involves a discomfort that results from perceiving the current method as inefficient. Participants may see the current method as ineffective. There is an emotional discomfort resulting from the use of current processes or technologies. This affective state can be self-induced. It can also result from campaigns for changes.

Time is an important condition. This refers to the organization's willingness to provide time, and the users' willingness to devote learning time for implementation. It also refers to availability of time. Users need adequate time to learn the new skills or procedures of an innovation. Compensated time may also help. This condition also incorporates the belief that with time, users can successfully adapt to a change.

The third condition deals with *adequate resources*. This refers to the resources currently available to successfully implement the innovation. This condition relates to how well the resource infrastructure can support the innovation. Adequate resources include those that are needed for supporting the innovation, such as hardware, software, finances, and personnel. Without these, implementation is reduced.

The fourth condition deals with *knowledge and skills*. Users must possess and/or acquire the needed knowledge and skills to use the innovation. Knowledge and skills are required for effective innovation use. Training is usually an essential part of most successful innovations. Without training for knowledge and skills, users can become frustrated. This condition also involves an assessment of the current level of user skills and knowledge. This condition also reflects users' feelings of self-efficacy; meaning that users need to believe in their ability to develop the necessary innovation skills. Ely reports that this condition consistently ranks as one of the most influential conditions among the eight.

The fifth condition deals with *rewards and incentives*. An incentive is something that serves as an expectation of a reward, and it gives a stimulus for action. A reward is given for meeting an acceptable standard of performance. Incentives and rewards motivate users to employ the innovation. These can be either intrinsic or extrinsic, and they vary from user to user.

Participation, as a condition, involves shared decision-making and communication among all parties/representatives. This relates to involvement in innovation planning and design. The participation of product users is emphasized, but this condition refers to all stakeholders. This condition helps intended users develop a sense of ownership of the innovation.

Commitment refers to the user perception of innovation support. Valuable support comes from those in supervisory roles. The supervisory endorsements promote the innovation. It is important to note how users perceive supervisory commitment to innovation implementation. Simple verbal endorsement by supervisors does not fully constitute commitment. Effective forms of commitment include personal communication, resource allocation, and active involvement.

Leadership is the eighth condition. Leadership refers to the level of ownership and support given by the leaders who will manage the daily activities of those using the innovation. Leadership includes active involvement by immediate supervisors. Users are assisted in implementing the innovation. This condition includes providing user encouragement, as well as role modeling of innovation use. Leader enthusiasm directly affects the motivation of the innovation users. Immediate supervisors must provide support and encouragement, answer questions, provide information, and address concerns (Ely, 1990, 1999; Ensminger, Surry, Porter, & Wright, 2004; Surry & Ely, 2001; Surry & Ensminger, 2003).

According to Ely, the eight conditions apply to both technological and non-technological innovations. They also span institutional and cultural boundaries. The conditions are interrelated, even though they are presented separately. The factors either

support or undermine each other. Ely does not present a specific implementation model. However, by addressing these factors, successful innovation implementation is more likely (Ely, 1990, 1999; Ensminger, et al., 2004; Surry & Ely, 2001; Surry & Ensminger, 2003).

Ely's conditions are explored in several dissertations (Bauder, 1993; Colley, 2009; Jeffery, 1993; Kajuna, 2009; Ravitz, 1999; Read, 1994). These studies discuss Ely's conditions in terms of implementing innovations. The results for these dissertations indicate that Ely's conditions are important for implementation. To facilitate implementation, those responsible for change or innovation adoption need to acquire information about implementation factors. It is important to know what is important to intended users or planners. This requires assessing those factors, whether using a qualitative approach and/or a quantitative survey. Then, individual and/or organizational profiles are used to specifically discuss the implementation factors (Ensminger, et al., 2004). These general approaches are also applicable to this dissertation. In this dissertation study, Ely's eight conditions are used as a theoretical framework to examine directors' views on ETPD implementation in 21st CCLC. The qualitative study and the quantitative survey provide directors' views on ETPD implementation information.

Importance of This Study

As established in this literature review, afterschool programming (as in the NC 21st CCLC programs) enhances the academic and social development of students. Educational technology is an important learning tool, especially in the afterschool setting. Educational technology professional development (ETPD) promotes effective educational technology usage in afterschool. ETPD implementation should account for the realities of afterschool programming.

This study is important because it addresses a major under-researched factor in 21st CCLC use of educational technology: ETPD implementation. Research on 21st CCLC ETPD implementation principles is needed. It is difficult to find literature that specifically addresses this topic. This dissertation addresses this research gap. This mixed methods approach also addresses a program evaluation gap for NCDPI. A qualitative ETPD director study has not been conducted before. There are no current ETPD surveys available for NC 21st CCLC. Therefore a mixed methods approach provides a multifaceted view of NC 21st CCLC director views on ETPD.

CHAPTER III

METHODOLOGY

This chapter discusses the study research methodology. This information is organized into the following sections: (1) research questions, (2) research design, (3) qualitative data collection, (4) qualitative data analysis, (5) quantitative data collection, (6) quantitative data analysis, (7) study reliability and validity, (8) limitations of the study. (9) protection of human subjects, and (10) my views of the research topic.

Research Questions

The questions that framed this research are as follows:

1. What are thirteen 21st CCLC directors' views on the current state and needs of ETPD implementation in their sites?
    a. How can these views inform the creation of a statewide 21st CCLC ETPD survey for all North Carolina 21st CCLC directors?
2. According to North Carolina 21st CCLC directors, what is the current state (and needs) of ETPD implementation in 21st CCLC sites (as determined by a statewide survey that was informed by the results of the 13 qualitative director interviews)?

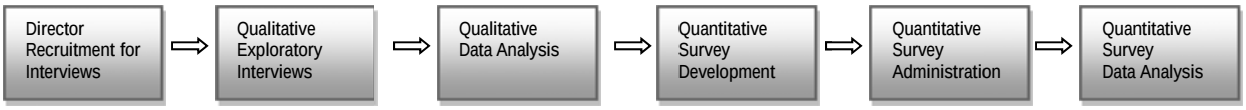
Research Design

Rationale for Mixed Methods Design

This study employed a mixed methods research design, which involved analyzing, collecting, and interpreting qualitative and quantitative data (Bryman, 2006; Creswell, 2005;

Creswell & Plano-Clark, 2006; Creswell, Shope, Plano-Clark, & Green, 2006; Haertel & Means, 2003; Onwuegbuzie & Leech, 2006). This study used a mixed methods approach based on *Qualitative/Quantitative*, or *exploratory* mixed methods (Caracelli & Greene, 1993). This study was based on a sequential exploratory instrument development design. The research began with qualitative exploratory interviews. The results from the qualitative exploratory interviews assisted in developing the quantitative survey instrument (Caracelli & Greene, 1993; Greene, Caracelli, & Graham, 1989; Newman, Ridenour, Newman, & DeMarco, 2003). Figure 3.1 shows the stages of data collection for this study.

Figure 3.1
Stages of Data Collection



The mixed methods research rationale for this study was instrument fidelity. With instrument fidelity, the qualitative interviews directed the study and established the questions that were asked in the survey. This maximized the appropriateness and utility of the 21st CCLC ETPD survey instrument.

This mixed methods approach provided detailed information on the topic of the current state and needs of 21st CCLC ETPD. My original plan for this study was to conduct a detailed qualitative study, with a selected group of diverse directors. This qualitative approach formed the first research question: What are thirteen 21st CCLC directors' views on the current state and needs of ETPD implementation in their sites? (Note: The final number

ended up being 13. This number of 13 was not established as an original part of the research question.) When I discussed this approach with a NCDPI official, the official stated that an additional survey could provide needed insight on the same topic, from a statewide perspective. I agreed with this, especially since a 21st CCLC ETPD survey had not been conducted before. The exploratory mixed methods approach was used in order to develop a targeted survey. The exploratory qualitative interviews helped me to determine the most appropriate survey design and targeted survey items for NC 21st CCLC ETPD. The exploratory interviews also focused the statewide survey on ETPD themes that were important to NC 21st CCLC directors (Collins, Onwuegbuzie, & Sutton, 2006; Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 2003). By using this sequential exploratory instrument development design, it was important to establish that the qualitative interviews would inform the survey development. Thus, there was a need for a sub-question for the first research question: How can these views inform the creation of a statewide 21st CCLC ETPD survey for all North Carolina 21st CCLC directors?

This mixed methods approach led to the formulation of the second research question, which was designed to get the statewide director views on 21st CCLC ETPD: According to North Carolina 21st CCLC directors, what is the current state (and needs) of ETPD implementation in 21st CCLC sites (as determined by a statewide survey that was informed by the results of the 13 qualitative director interviews)? The second research question was linked to the first research question, in terms of specifying that the qualitative interviews helped to determine the survey themes. Therefore, the mixed methods approach helped to refine the development of the research questions.

Population and Sample

This study was limited to the 2009-2010 North Carolina 21st CCLC directors. It was beneficial that all interviews and survey responses were from the 2009-2010 cohort group, because afterschool staffing usually changes yearly. By conducting the study with the most recent cohort, this helped to address the most current ETPD implementation needs.

Qualitative Data Collection

Director Recruitment for Interviews

I recruited directors to participate in the study. NCDPI officials provided a list of 103 director email addresses to me. I also asked the following individuals for director interview suggestions: the former NCDPI 21st CCLC section chief, the current NCDPI 21st CCLC section chief, and the current 21st CCLC education consultants. Some director participants were also identified by other directors. I also recruited initial qualitative interview directors by sending a study recruitment email (Appendix A). I made all efforts to establish a sample with a range of experiences, cohort groups, different NC areas, site settings (school vs. church/community center), and 21st CCLC experience.

Qualitative Research Interviews

The research objective for the qualitative interviews was *explanation.* Explanation represents developing theory for the "purpose of elaborating on the relationship among concepts or phenomena, and determining reasons for occurrences of events" (Johnson & Christensen, 2004; Onwuegbuzie & Leech, 2006, p. 479). Qualitative research interviews assisted in explaining thirteen NC 21st CCLC directors' views on ETPD implementation in the programs. Qualitative research interviews revealed the directors' points of view, thoughts, experiences, and perceptions (Kvale, 1996; Patton, 1987). Qualitative research

interviews were used as an exploratory step before designing the quantitative, structured 21st CCLC ETPD questionnaire. The qualitative interviews helped to determine the appropriate questions and categories for the survey questionnaire.

Interview Data Gathering and Management

The qualitative exploratory interviewing phase lasted from December 2009 to April 2010. The qualitative dissertation data came from observations, interviews, and document analyses (Denzin & Lincoln, 1994; Miles & Huberman, 1994). During the visits, I also conducted some of the following additional tasks: examining any ETPD materials, observing any planned ETPD sessions, surveying the site location, and many other programmatic responsibilities.

I used the *interview guide approach* as the qualitative interviewing format (Kennedy, 2006, Strauss & Corbin, 1990). In this approach, I used an interview guide that provided an outline of topics to discuss (Appendix B). The interview guide questions asked for director views on 21st CCLC educational technology and ETPD implementation topics: ETPD models, software, programs, resources, scheduling, staff and student influences, areas of need, barriers, and related topics. I conducted the interviews in a conversational manner. Immediately before I began with the interviews, I gave the directors a copy of the questions. I told them that this was the list of questions that I would ask. I encouraged the directors to tell me if a question was confusing or if a question had unclear wording. I also told them that they could refuse to answer any questions that they were not comfortable with. The copy of the interview guide seemed to help the directors to relax. For example, after I provided the interview guide, one director stated, “This is good, because I can see the types of things that

you are going to ask me." Also, by seeing the interview guide, the directors were able to monitor our interview progress. They could note whether our interview was halfway through or close to the end.

There were advantages and disadvantages to this interview guide approach. I was free to vary the wording and question ordering, to some extent. The respondents provided some open-ended responses that were not restricted to interviewer choices. The data was more comprehensive than in an informal conversational interview, because the planned topics and questions were addressed. This approach required active engagement from me. I did not just ask the questions and accept the first answer that I received. I probed for more in-depth responses or guided the conversation in order to adequately address all the topics. For example, if a director gave a short, terse answer, I asked the director to give me some more information, or to provide examples. I also asked immediate follow-up questions if I was interested in an answer. For example, one director told a fascinating story about how he/she had to deal with a teacher who resented additional trainings, because the teacher was so busy. I then asked the director to tell me his/her views on some approaches to foster ETPD acceptance for reluctant participants. The director began to talk about how extra pay could have helped the reluctant teacher, because the reluctant teacher was a "time-strapped" single mother. This was not one of my pre-determined interview guide questions, but I wanted to get feedback while we were on the topic. These adjustments were fine, because qualitative methods can be "adjusted, expanded, modified, or restricted on the basis of information acquired during field-work" (Goetz & LeCompte, 1984, p. 108). There were also possible disadvantages to the interview guide approach. Adhering to the planned topics may have prevented the directors from adding additional information. The directors may

have felt pressured to answer my questions only, instead of providing all of their own thoughts in an open manner (Guba & Lincoln, 1981; Guba & Lincoln, 1994; Patton, 1987, 1990; Savenye & Robinson, 2004).

I attempted to conduct all of the director interviews in person. Personal interviews took place in director offices, or other private areas. However, inclement weather (snow) interfered with two of the scheduled visits. For these two visits, I conducted extensive telephone interviews.

I made every effort to maintain the integrity of the interview sessions. Interview participants had to first sign a consent form for participation in a research study (Appendix C). I also recorded the interview conversations. I also noted additional observations in a notebook, while the conversations were taking place. My additional observations included my thoughts on the interviews. I wrote about my observations on the interview setting. For example, one director wanted us to conduct one interview at lunchtime, in a restaurant. Although there was a lot of background noise and several interruptions from the servers, it was one of the best interviews. The director was relaxed, and he/she provided a lot of specific information. I also took notes on the directors' demeanors and attitudes about the interview process. For example, if a director seemed to be uncomfortable or rushed, I made a note of that. I also made notes about my own thoughts. If I was impressed with a site's ETPD offerings, I noted my thoughts. Therefore, I tried to get as much interview information as possible.

Qualitative Data Analysis

Constant Comparative Method

The qualitative interviews were evaluated using the constant comparative method, which facilitated detailed comparison and contrasting of data (Strauss & Corbin, 1994). I extracted keywords and themes from the direct quotations of the directors, using direct interpretations. I compared, contrasted, and sorted the data. Data collection ceased when no new categories of data were encountered (Creswell, 2007; Goetz & LeCompte, 1984; Savenye & Robinson, 2004; Stakes, 1995; Strauss & Corbin, 1998).

Boeije's (2002) specific approaches for constant comparison were used for this dissertation (Appendix D). This approach involved comparing keywords in a systematic way, using different coding approaches and goals. Boejie's approach was very helpful, because it helped me to form meanings from volumes of interview data. I used this orderly approach to provide more consistent coding and analysis.

First, I coded information within a single interview. This involved open coding of each individual interview, as a first step. I summarized all of the main ideas of each interview. This initial approach helped to develop the main coding categories. As I coded for each interview, Ely's conditions became apparent. I noted all of the direct quotations that supported Ely's conditions. I also looked for themes that did not fit with Ely's conditions.

During this coding within a single interview process, it became apparent that the interviews were in two camps: *directors in sites with 21st CCLC ETPD* and *directors in sites without 21st CCLC ETPD.* This was a surprising development, because I was not expecting such a clear distinction, with two clearly different categories. Of course, for the *directors in sites without 21st CCLC ETPD,* some of their sites did have some forms of professional

development, and even some levels of educational technology use. However, these directors did not describe any concerted, organized efforts to provide ETPD that was designed for 21st CCLC. They also did not describe any special efforts for 21st CCLC ETPD, such as partnerships or specially developed ETPD curricula. Most of these directors relied upon whatever trainings were offered by LEAs or the existing knowledge of the staff members. Therefore, it was easy to distinguish them from *directors in sites with 21st CCLC ETPD*.

The second approach involved coding between interviews of the same group of people with the same experiences. Since the dichotomy of *directors in sites with 21st CCLC ETPD* and *directors in sites with 21st CCLC ETPD* was established, I had to closely examine the interviews within each of these groups, separately. I had to determine larger patterns within the data, for each group. During this step, I analyzed the similarities and differences in each group. This involved examining clusters of interviews, and looking for major concepts to describe the similarities and differences. Clear themes emerged within each group. For example, it became apparent that *directors in sites with 21st CCLC ETPD* employed strategies to increase ETPD offerings, such as asking staff members to provide free ETPD for other staff members. As another example, *directors in sites without 21st CCLC ETPD* struggled with finding time for staff participation.

The third approach involved coding between groups with different perspectives. This step built upon the previous steps. I looked at what the *directors in sites with 21st CCLC ETPD* said about Ely's themes, and then I examined what the *directors in sites without 21st CCLC ETPD* said about the same themes. For example, it became apparent that both groups agreed on the need for an updated 21st CCLC website. I also noted which themes appeared in

one group, but not the other group. For example, the *directors in sites with 21st CCLC ETPD* set aside specific 21st CCLC ETPD times well in advance, usually during the summer. This theme was not found in the interviews of *directors in sites without 21st CCLC.*

The fourth approach involved comparison in pairs of interviews, within each group. This part was different from the aforementioned second approach, because it involved additional analysis of the relationships. For example, instead of just noting the similarities and differences within each group, I had to form interpretations of the data for each group. For example, all of the *directors in sites without 21st CCLC ETPD* stated that the needs for other professional development were greater than the need for ETPD. However, further analysis of this group revealed that some of these *directors in sites without 21st CCLC ETPD* were newer sites. The newer sites were struggling to find time for implementing any professional development, not just ETPD. It was helpful to note this additional interpretation of the interview data. Therefore, this coding approach helped with establishing the details of my interpretations.

The fifth approach involved comparing interviews with several couples. This part involved finding additional criteria for couples, including any larger patterns or clusters of relationships. For example, this approach helped me to notice that all of the directors mentioned the use of (or the need for) prescriptive, academic educational technology programs. Using the approach of comparing interviews with several couples, I identified the types of programs that were mentioned, such as FOCUS, Study Island, and others. Then, in further analysis, I examined the director's views on why these materials were good for ETPD. The directors discussed how these programs included ready-made lesson plans, an ETPD curriculum, and other support services. As another example, teacher fatigue was

clearly noted as an obstacle to 21st CCLC ETPD for directors of both groups. However, during this step of coding, I identified all of the coding information that specified how teacher fatigue affected 21st CCLC ETPD for directors in sites. This approach helped me to provide specifics on the theme of teacher fatigue.

Quantitative Data Collection

Quantitative Survey Development

Survey items from national surveys. In the initial process of survey development, I used validated items from other instruments or scales (DeVellis, 1991). For this 21st CCLC survey, I adapted selected questions from two nationally recognized surveys that address ETPD: (1) the CRITO TLC survey (1998 Center for Research on Information Technology and Organizations [CRITO] Teaching, Learning, and Computing [TLC] Survey), and (2) the Integrated Studies of Educational Technology (ISET) survey.

Information on the CRITO TLC survey. The nationally recognized CRITO TLC survey examined many facets of ETPD. Therefore, it was suitable for adaptation and modification for this study. I gained permission from Dr. Hank Becker, the director of the CRITO study, to modify some of the CRITO TLC questions.

The CRITO TLC survey examined professional development, ETPD, teachers' use of computer educational technology, teachers' pedagogies, and their school context. This national survey was funded by the National Science Foundation, with additional funds provided by the Office of Educational Research and Improvement of the U.S. Department of Education (CRITO, 1998). The CRITO TLC survey derived questionnaire responses from three school samples: a national probability sample, a purposively drawn sample of schools (those with greatest per-capita computer technology), and another drawn sample of schools

that were involved in substantial educational reform efforts. Participants in the CRITO TLC study worked with fourth grade through twelfth grade students. With each school, the CRITO TLC study collected data from principals, school technology coordinators, and a probability sample of teachers, each with a separate survey (Ravitz, Wong, & Becker, 1999).

The CRITO TLC survey was developed with exploratory studies and pilot testing. Exploratory studies of survey measures were conducted on the following: teaching practices, technology use, school level technology investments, hardware, software, training, and teacher support. Using the self-reported data from 72 teachers and 24 schools, detailed classroom observation and interview data from the same teachers were also examined. At the school level, CRITO TLC researchers used pilot survey versions to test measurement approaches for studying the following: technology expenditure, hardware/software acquisition, and investments in teacher training/support (CRITO, 2001, p. 1).

Information on the ISET survey. The Integrated Studies of Educational Technology (ISET) included three reports: (1) Implementing the Technology Literacy Challenge Fund (TLCF) Educational Technology State Grants Program, (2) Formative Evaluation of the E-Rate Program, and (3) the Professional Development and Teachers' Uses of Technology Study. For the 21st CCLC survey, I adapted questions only from the ISET Professional Development and Teachers' Uses of Technology Study. This particular ISET report provided information on current teacher ETPD practices, the quality and influence of ETPD, policy and federal investment influences in the Technology Literacy Challenge Fund (TLCF) on ETPD initiatives, and how professional development supported technology integration. I talked with Dr. Nancy Adelman, the director of the ISET study, to inform her about the intended use. Since the ISET study was sponsored by the USDOE, it is in the public domain.

The ISET surveys were developed jointly by the Department of Education and contractors such as SRI International. First, the content areas for each survey were established. ISET team members examined existing instruments and data sources (such as Milken and Market Data Resources) for potential use. However, the vast majority of survey items were new ones. These items were developed in an iterative, collaborative process between Department of Education staff and the contractors. The ISET surveys were pilot-tested for length and content during July and August 2000. Based on feedback from pilot test respondents, data collection instruments and procedures were refined. Items were added or deleted, wording was clarified, and response options were adjusted. The Office of Management and Budget (OMB) authorized the ISET data collection (Adelman, Donnelly, Dove, Tiffany-Morales, Wayne, & Zucker, 2002, pp. A-4 to A-5).

Using qualitative interview data to refine the 21st CCLC survey. For the 21st CCLC survey, the qualitative interview information was used to develop the survey themes and topics. The quantitative 21st CCLC survey explored ETPD implementation themes that emerged from the qualitative interviews. The survey items focused on the 21st CCLC ETPD factors that were identified by the interviewed directors.

Most of the qualitative study themes were represented in the CRITO and ISET draft questions. My time as a 21st CCLC director undoubtedly helped with this. Because of my director knowledge, I was able to pre-select questions based on my experiences.

The qualitative data led to some major structural changes to the original survey draft. While conducting the qualitative study, I found that beginning the sessions with a discussion of educational technology helped the memories of the directors. After the discussions about

educational technology, they became more comfortable with discussing ETPD. Therefore, I decided to move the questions that asked about naming educational technology programs and describing educational technology usage to the beginning of the survey. These questions were placed before all of the ETPD questions.

As a result of the qualitative study, I decided to "branch" many of the survey questions. It was apparent that the majority of the interviews fell into two categories: *directors in sites with 21st CCLC ETPD* and *directors in sites without 21st CCLC ETPD.* Therefore, *directors in sites with 21st CCLC ETPD* received a set of survey questions about their site's current ETPD state, for the following categories: ETPD models, software ETPD, resource ETPD, and ETPD characteristics. Directors in sites *without 21st CCLC ETPD* were asked questions about their ETPD needs, for the same categories. Many of the themes were relevant to all of the directors, such as rewards and incentives and barriers to ETPD. I made sure that those themes were reflected in the survey questions for all directors. Therefore, all directors received questions about the following: the presence of a technology plan, support that would help with ETPD, needed ETPD, barriers to ETPD, ETPD rewards and incentives, open-ended comments on ETPD or the survey, and demographic information.

The qualitative data also led to some survey item changes to the original survey draft. For example, the qualitative data helped me to determine which themes were missing from the survey item draft. I added these missing themes to the survey items. For example, in the question about ETPD models, I added *director training of afterschool teachers* and *training by a professional institute or organization* based on the qualitative data. I added *music creation software* as a possible option on the question about software ETPD. I added *wireless networks* as an option on the question about resource ETPD. For the question that

asked about kinds of support to help with ETPD, I added *21st CCLC website with information* and *an on-site support person to lead ETPD implementation.* These examples of survey item additions came directly from the qualitative data.

In developing the 21st CCLC ETPD survey, I was careful to link the survey items to Ely's eight conditions of implementation, based on the interview information. I specifically looked for survey item linkages to Ely's conditions, based on the qualitative interview results. For example, during the qualitative interview coding process, it became apparent that *teacher fatigue and workload* was a major deterrent to 21st CCLC ETPD. This theme was not included in the original ISET survey question item that asked about barriers to ETPD. Therefore, based on the qualitative survey, I added *teacher fatigue and workload* to the question. I then thought about which one of Ely's conditions this topic of *teacher fatigue and workload* would address. I determined that it fit with Ely's condition of adequate time, because the directors discussed how teacher fatigue and workload hurt their ETPD timing and scheduling efforts. In the process of the survey item refinement (that was based on the qualitative interview results), I noted how each of the survey items fit one or more of Ely's conditions. I used the directors' interview themes to make sure that I was addressing Ely's conditions in the 21st CCLC ETPD survey. I felt that it was important to make sure that each of Ely's conditions were represented in the 21st CCLC ETPD survey items, just as each of Ely's conditions were addressed in the qualitative coding.

Ely's eight conditions of implementation are very broad, in order to enhance their applicability to a wide variety of educational settings and programs. However, Ely's conditions should be evaluated in the context of specific settings (Ely, 1990, 1999; Surry & Ensminger, 2003). The North Carolina 21st CCLC programs have very specific ETPD

implementation needs. I used Ely's conditions as guidelines to examine the various aspects of 21st CCLC ETPD implementation. Reading Ely's works about the eight conditions would not provide this specific 21st CCLC ETPD information. Therefore, this study adds to Ely's work, by specifically discussing how the eight conditions apply to NC 21st CCLC ETPD.

Literature review. After the coding of the qualitative data, I conducted an additional literature review. This helped me to note if any important themes were omitted from the survey. I especially focused on the ETPD literature. I found that most of the themes in the literature were well represented in the survey items. However, I also found some important themes that were missing from the draft survey items. These themes did not emerge from the qualitative interview data. For example, in the course of the qualitative interviews, the directors did not discuss the use of videoconferencing for 21st CCLC ETPD. However, I found the videoconferencing theme in the professional development literature (Annetta & Dickerson, 2006). Therefore, I modified a survey item in order to ask about videoconferencing for ETPD. In the course of the qualitative interviews, the directors did not discuss technology implementation plans. Technology implementation plans are school or program guidelines for the acquisition, usage, and integration of educational technology. The ETPD literature discusses how technology implementation plans are essential to ETPD planning and implementation (NCREL, 2000). I modified the survey needed to ask a question about technology implementation plans. Therefore, the literature review also helped to complete these survey item gaps.

Cognitive interviewing. I also engaged in cognitive interviewing (DeMaio & Rothgeb, 1996) with two former 21st CCLC directors. Cognitive interviewing showed me if the intended respondents could understand the survey questions. These individuals (who were not in a current 21st CCLC site) gave unbiased input on the survey. These two former directors were similar to the intended survey participants.

With this process, I administered the draft survey to the former directors. I met with them separately in their offices, in a quiet, private setting. These former directors gave unbiased feedback. I recorded their responses, and I also took notes.

I used the *think aloud* method of cognitive interviewing (Willis, 1999). With the *think aloud* method, the two former directors talked freely while completing each question. They shared their thought process. I remained silent while they were providing their thoughts and observations. Therefore, the two former directors were not influenced by my thoughts on the survey. They provided me with unbiased information on their survey question interpretations. Once the session was over, I asked the former directors to note all of the changes they would make. I also asked the former directors to address how other directors may interpret the questions. I sought to create a natural, informal setting with this process. I recorded the sessions, in order to ensure that I implemented all of their suggested changes.

The cognitive interviewing process was very helpful for the survey development process. The directors felt that the original survey draft was too long. Therefore, they suggested that I should delete some questions that were confusing or redundant. For

example, one original question asked about ETPD topics that were needed. However, the same themes in that question could be found in other existing questions. Therefore, that question was deleted.

The cognitive interview directors assisted with survey item clarity problems. For example, one director felt that it was unclear to ask directors if they had multiple sites. He/she told me that it would make more sense to ask if the directors had more than one site. As another example, another question in the initial draft asked about how much ETPD topics were discussed, with selections of *topic not discussed*, *topic briefly mentioned,* and *central topic*. The directors felt that the selections were confusing, because it may be difficult for directors to remember if a topic was briefly mentioned. They also wondered what the term *briefly* really meant. The cognitive interview directors both suggested that I should delete that question, and make sure that the question themes were located in other survey items.

The cognitive interview directors assisted with survey item privacy issues. They expressed concern about an initial survey draft question that asked about the director's gender. They felt that this question might unfairly identify the few men who are 21st CCLC directors. One director was uncomfortable with a draft question that asked about total student enrollment. He/she pointed out that afterschool enrollment changes very often throughout the year, so this question might confuse the responding directors. Also, afterschool enrollment is a NCDPI evaluation issue, so some directors might feel uncomfortable with being asked this question. For the question that asked for the directors' zip codes, they made a good suggestion: I needed to explain why I was even asking that

question. Therefore, I added in some sentences that stated how I was using the zip code question to determine urban, suburban, and rural representation. I also added a statement saying that this question would not be used to identify the survey directors.

The cognitive interview directors suggested that I should move all of the demographic questions to the end of the survey. They noted that some of the directors might not even start with the survey if they saw the demographic questions first. They helped me to understand that privacy would be a major concern for the survey directors. Therefore, by moving the demographic questions to the end of the survey, I would increase my chances of receiving director responses to the ETPD questions. The cognitive directors stated that the survey directors might be more receptive to beginning with ETPD questions. The cognitive directors also stated that the survey directors might just close the survey if they received demographic and personal questions right at the beginning.

The information from the cognitive interviews helped with survey item appropriateness. The cognitive interview directors helped me to understand why some of the survey items were not fully relevant to the 21st CCLC context. For example, the initial survey draft asked for directors to describe the daily schedule used at their 21st CCLC site, with *before school*, *afterschool*, or *both* as the choices. One director pointed out that even if some sites offered an occasional before school special session, it was still primarily an afterschool program. Many before school sessions involve infrequent activities such as breakfasts or special events. The programming and student activities take place in the afterschool hours. Therefore, that question was deleted, to avoid confusion.

Quantitative Survey Administration

I used the SurveyMonkey program to administer the quantitative survey. SurveyMonkey is a leading web-based survey program. It is used by many corporations, businesses, academic institutions, and organizations. SurveyMonkey provides privacy and security measures for data, such as encryption and multi-machine backup (SurveyMonkey, 2009).

21st CCLC directors were informed of the online survey purpose. With the SurveyMonkey program, I emailed an explanatory letter to the directors (Appendix E). This letter provided information about the study, along with the link to the actual 21st CCLC survey (Appendix F).

I made several efforts to retrieve 21st CCLC survey results, in a timely manner. The explanatory letter and survey link were emailed to all the 2009-2010 21st CCLC directors on May 12th, 2010. Participating directors clicked onto the survey link to access the actual survey. The explanatory letter and survey link were emailed to all of the 103 email addresses, in order to reach all the directors. If respondents had not completed the survey during the first administration, they received a second reminder on May 18th, 2010. A final reminder was sent on June 2nd, 2010. Each reminder included the letter text of the first email and the same survey link, in order to establish continuity. The SurveyMonkey program allowed me to track survey respondents and non-respondents.

Quantitative Data Analysis

The research objective for the quantitative portion was descriptive. *Description* involves identifying and discussing the nature and characteristics of a phenomenon (Johnson & Christensen, 2004; Onwuegbuzie & Leech, 2006). The quantitative portion provided

descriptive statistics on directors' views of ETPD implementation in the NC 21st CCLC sites. Descriptive statistics were appropriate for this portion of the study. I used basic descriptive statistics (the counts and percentages of answers) to provide information on the survey responses. Calculating the counts and percentages to each survey question provided information on the raw data results. These descriptive statistics gave me a way to summarize and describe the data on the directors' responses to each survey question. Once I had the results from the descriptive statistics, I was able to provide a basic analysis of the responses to each survey question (Drew, Hardman, & Hosp, 2008; Gorard, 2008; Salkind, 2008). I analyzed the numerical survey information with the software program SPSS. SPSS is a statistical analysis program. It is used for both basic and advanced statistical analysis of data, for research and other projects (SPSS, 2010). SPSS was used to calculate the counts and percentages of the directors' responses to the survey questions.

The survey also contained some open-ended responses, such as the survey question that asked directors to name the educational technology programs in their sites. I analyzed these open-ended responses by counting the frequencies of responses. For example, the first question asked the directors to enter information on the educational technology programs that their sites used. Many directors entered the program named Study Island. The frequency of the Study Island response showed that this was a popular educational technology choice for the directors.

Study Reliability and Validity

Prolonged engagement was essential for a proper study. The complete study research (interviews and survey administration) was conducted from December 2009 to June 2010. Therefore, enough time was provided for interview analyses and survey administration.

Persistent observation means that relevant characteristics and elements were examined in a timely manner. The study was scheduled and completed within the same school year. This preserved the integrity of the research findings from beginning to end. This was especially important with the nature of afterschool employment: many workers cycle through from year to year.

In this study, a process of methodological triangulation took place. With methodological triangulation, two research methods (qualitative and quantitative) were combined to study the same issue: NC 21st CCLC directors' views of ETPD implementation. This had the effect of providing a richer account via two methods. There were multiple observers on the topic of 21st CCLC EPTD implementation. This enhanced the study's validity (Greene & Caracelli, 1997).

Qualitative Interview Reliability and Validity

Erlandson, Harris, Skipper, and Allen (1993) described techniques that ensure the quality of a qualitative study. These techniques guided the formation, implementation, and conclusion of the interview portion of the study. Referential adequacy was ensured with the simultaneous use of notepad writing and audio recording. This method allowed me to conduct coding analysis at a later, uninterrupted time. I employed thick description with the interviewing notes, using detailed records and descriptions. Direct quotations were used to draw research conclusions. I scanned, photocopied, or directly quoted specific materials, such as any professional development materials. This provided additional information on materials and ETPD programs that were directly mentioned by the directors. In this research, all data were systematically documented and saved, for an audit trail. I recorded all raw data, field notes, documents, categorizations, and notes (Savenye & Robinson, 2004).

Peer debriefing was essential for soliciting feedback. With peer debriefing, I reviewed the research with others. My advisor and committee members provided guidance in this area. This helped to avoid potential flaws in logic, methods, or validity threats.

I conducted relevant follow-up qualitative interviews. Follow-up interviews were conducted to gain additional information or to develop incomplete information. Once I transcribed the interviews, sometimes I noticed gaps in the information. For example, one director was discussing the problem of teacher fatigue in his/her sites. At that time, one of the 21st CCLC students came in to discuss his/her personal problems. I turned off the recorder and left the room. I had to wait for a while, because their conversation took a while. Once I returned, the director did not have as much available time, because the afterschool programming was about to begin. Therefore, the director's responses to the rest of the questions were short. I had to schedule some time for additional follow-up interviews, to fill in the information gaps. This helped to avoid information misinterpretation. Follow-up interviews took place in person and via telephone.

With member checking, participating interview directors were asked to review copies of the documents and transcribed interviews. Interview directors were asked to make any changes or additions to their interviews. I transcribed the audio files. Once I completed the transcriptions (including all of the follow-up interviews), I emailed the Word document to the directors. In the email, I asked each director to review the Word transcript, and to make any changes or additions deemed necessary. However, I emphasized that they needed to track all of their changes, so that I could distinguish between the original responses and the changes. Each of the directors followed these directions.

The directors were helpful with the member checking process. Most of the directors were fine with their transcripts, and they approved the transcripts with one review. Some of the directors added details about the educational technology programs they used. For example, the directors mentioned particular educational technology programs during my visits. However, when they reviewed their transcripts, they remembered some other educational technology programs they were also using. I wrote verbatim transcriptions, in which I maintained the speech patterns and the exact wording of my questions and the director responses. Some of the directors were dismayed at their speech patterns during the interviews, and two actually changed their responses to grammatically correct English conventions. Two of the directors felt that they sounded negative about their job, and the demands. They added some positive comments about their job, and the rewards of providing afterschool services.

Research interpretations were directly based on the case study data and the objective descriptive survey results. This allowed the views of the current directors to be expressed. The perspectives of multiple directors also helped to validate the results.

Quantitative Survey Reliability and Validity

Efforts were taken to establish the reliability and validity of the 21st CCLC survey. The 21st CCLC survey items were based on the nationally recognized CRITO TLC and ISET survey items. I engaged in a discussion of the CRITO TLC and 21st CCLC initial survey item drafts with Dr. Hank Becker, principal director of the CRITO TLC survey.

I attempted to find information on the internal consistency for items in the subcategories of the CRITO TLC and ISET surveys, along with information on the internal consistency for the entire CRITO TLC and ISET surveys. The only reliability measures that

were calculated were for the TLC teacher's survey related to the scales and subscales dealing with constructivist beliefs and practices. In terms of internal consistency, one alpha coefficient was calculated for the 13-item teacher beliefs scale as a whole (Ravitz, et al., 2000, p. 12). The coefficient calculated was .83. Alpha reliability coefficients were also calculated for the constructivist practice scale as a whole (alpha=.86, not published) and for the two main constructivist practice sub-scales. The 16-item Cognitive Challenge subscale had an alpha of .85 and that for the 11-item Active Learning subscale was .74. Neither of those was published in Ravitz, et al. (2000). The CRITO TLC researchers did not calculate alpha coefficients or attempt to measure validity for any of the other constructs operationalized in the study (e.g., professional role orientation). Most scales were short, and others (such as the professional role orientation scale), were not simple additive scales. Therefore, common reliability measures were not appropriate (H.J. Becker, personal communication, October 13, 2010). I did not use the survey items from the constructivist beliefs and practices items, so this information did not apply to this 21st CCLC ETPD study. I also attempted to find information on the internal consistency for items in the subcategories and the internal consistency for the ISET Professional Development and Teachers' Use of Technology Study. This information does not exist (N. Adelman, personal communication, October 13, 2010). Therefore, information on the internal consistency for items in the subcategories and the internal consistency for the entire instrument is not available for the 21st CCLC ETPD survey.

The developed 21st CCLC survey was closely examined before it was distributed. The 21st CCLC survey was reviewed by the current NCDPI section chief and my committee members. The survey was also approved by the Institutional Review Board (IRB) before administration.

The privacy reassurances for the 21st CCLC online survey might have helped with factual director answers. I did not ask the survey directors to provide their name or the name of their program in the survey. In the explanatory email for the survey link, I told the directors that their responses were confidential, and they would not be identified to NCDPI or 21st CCLC. I also stated that no specific person or specific site would be identified in reports.

Each phase of the survey development process assisted with creating a targeted 21st CCLC ETPD implementation survey. The qualitative research verified and modified the survey format. It also helped with 21st CCLC customization. My literature review highlighted additional survey themes. The cognitive interviews addressed issues of survey length, clarity, privacy issues, and item appropriateness.

Protection of Human Subjects

All aspects of this study were approved by the IRB as Study Number 09-2109. Proper authorities were notified about the study. The current section chief of NCDPI received copies of all notification letters, documents, and information related to this study. All relevant location leaders (such as principals) received a copy of the notification form (Appendix G). In the future, NCDPI will only receive study result information at the larger general summary level; no individual data will be provided. All interview participants received the IRB-approved consent form (Appendix C), which detailed their rights to privacy

as a research subject. Participants were informed about the extensive privacy measures in three ways: in a verbal discussion, in the IRB consent form, and in the introductory letter of the survey. I also told participants that they had the right to refuse participation. All participants were informed of the goals, methodology, and uses of the research study. Participants were not identified by name or by site in the study. ID codes were used for forms, recordings, documents, and transcripts that were related to the case study. No identifying information was released during the recruitment phase or afterwards.

All measures were taken to safeguard the study information. The online survey link was sent directly to the director emails, to facilitate privacy. All survey data within the SurveyMonkey program was password protected. All files were protected by a secure network, password access, data encryption, password-protected files, and a secure office location.

My Views of the Research Topic

I have experience with 21st CCLC. I served as a director of a North Carolina 21st CCLC program, from 2003 to 2006. I also served as a contracted 21st CCLC grant reviewer for NCDPI, in July 2007 and July 2008. These roles enhanced my understanding of 21st CCLC ETPD structures and challenges. As a result, my prior experience helped with the initial development of the study. For example, I was able to pre-select CRITO TLC and ISET questions that could be used for a 21st CCLC ETPD survey. My experience also helped with the development of the interview guide. However, I tried very hard to prevent my prior experiences from determining the study results. I based the qualitative interview coding on the directors' direct quotes and interpretations. In turn, the finalized survey was influenced by the directors' quotes and interview information. Also, I did not influence the results.

I view ETPD as being important for 21st CCLC. This viewpoint stems from my former experience as a director. As a director, I had many responsibilities, including educational technology expenditures. I tried to make sure that the educational technology expenditures were reasonably priced and relevant to our afterschool lesson plans. I also recall the difficulties of dealing with ETPD implementation factors, such as budgeting for the cost of training, the low availability of time, scheduling the ETPD with multiple program sites, and other obstacles.

Some of our teachers were not totally comfortable with our program's promotion of educational technology. These teachers wanted to continue using the standard books and materials, instead of incorporating educational technology activities such as Smartboards and Internet research projects. I certainly understood their position, because these teachers felt the pressure to work on academic test preparation. I felt the same pressure. However, I felt that since we were working with struggling students, additional educational technology use could promote student engagement. These students were struggling in the regular classroom setting, with the books and standard materials. So, I saw afterschool as a prime opportunity to use educational technology. The students were not mandated to attend our afterschool programs. Therefore, I also felt that an emphasis on educational technology use could be attractive for student attendance, in addition to academic learning.

I found opportunities for ETPD, to facilitate the use of the educational technology. I used some outside contractors for ETPD, especially since I worked with four different sites. The site coordinators that I worked with did an excellent job of finding ETPD opportunities for the sites. Also, I traveled to state conferences with some of my teachers and site coordinators, to take advantage of ETPD workshop training opportunities.

As a result of my experiences, I believe that ETPD was essential for promoting teacher comfort with educational technology. In our program, I collected the lesson plans weekly, for record keeping. I reviewed these lesson plans to ensure compliance with the NCDPI evaluations, because the lesson plans were supposed to reflect the North Carolina Standard Course of Study. Many of the teachers responded to ETPD for afterschool programming. Once the teachers received ETPD, I noted that many of them changed their lesson plans to include more educational technology activities for students.

These realities spurred my interest in this topic. The director job is intense and time consuming. Often, a director can go without talking to another director for a long time, sometimes until the next NCDPI regional training. When I dealt with these ETPD challenges, I often wondered how other directors were dealing with the same challenges. This study provided some information on how the 2009-2010 directors were dealing with the same ETPD challenges that I dealt with years ago.

CHAPTER IV

RESULTS

Reporting of Qualitative Study Data

For the qualitative interviews, *data reduction* involved analyzing the qualitative data via coding (Onwuegbuzie & Teddlie, 2003). During the course of the qualitative study, I found that the directors fell into two categories: *directors in sites with 21st CCLC ETPD*, or *directors in sites without 21st CCLC ETPD*. This distinction formed a basis for comparing and contrasting the qualitative data.

The research questions that framed these qualitative results are: What are thirteen 21st CCLC directors' views on the current state and needs of ETPD implementation in their sites? How can these views inform the creation of a statewide 21st CCLC ETPD survey for all North Carolina 21st CCLC directors? These research questions were addressed with the qualitative exploratory interviews of 13 directors.

Characteristics of the Qualitative Interview Participants

I made every effort to recruit a diverse group of interview directors. In this section, the characteristics of the interview directors are presented separately, in order to maintain confidentiality. There were 11 female directors, and two male directors. There were eight African-American directors, and five White directors. Four of the directors were older adults, four were young adults, and five were middle-aged adults.

In terms of self-identified director level of experience, there were three *new* directors, four *moderately experienced* directors, and six *very experienced* directors. In terms of ETPD status, there were eight *directors in sites with 21st CCLC ETPD* and five *directors in sites without 21st CCLC ETPD*. In terms of the site type description, there were nine *school centers* and four *community centers.* In terms of geographical sections, there were five *Northeastern* sites, one *Eastern* site, two *Western* sites, three *Northwestern* sites, one *Southern* site, and one *Southwestern* site (Public Schools of North Carolina, Regional Map, n.d.). In terms of geographical classifications, there were four *urban* sites, four *rural* sites, and five *suburban* sites.

Demographic information on all North Carolina 21st CCLC sites was not available. Therefore, the 13 interview directors' sites were compared to Census data on the state of North Carolina. The next section contains Census 2000 highlights for the zip codes of the 13 interview director sites.

The 13 interview directors' site locations varied in terms of racial composition, labor force percentages, income levels, percentages below the poverty level, and educational attainment levels. The racial composition of the interview directors' locations varied. Five were majority *White* areas. Six were majority *African-American* areas. Two areas had no racial majority. *White* racial percentages ranged from a low of 12% to a high of 97%. *African-American* racial percentages ranged from a low of 0% to a high of 81%. *Hispanic* racial percentages ranged from a low of 0% to a high of 14%. The labor force percentages of the interview directors' locations varied. *Men in the labor force* ranged from a low of 59% to a high of 87%. *Women in the labor force* ranged from a low of 41% to a high of 70%. The interview directors' locations also had varied median household income ranges. For the 13

directors' sites, the 1999 median household income ranged from over $16,500 to nearly $65,500. The *percentages below the poverty level* for the interview directors' locations varied. For the 13 directors' sites, the *percentages below the poverty level* ranged from a low of 5% to a high of 44%. The 13 interview directors' locations also had varying ranges of educational attainment percentages. *High school* graduate rates ranged from a low of 43% to a high of 69%. *At least associates degree* educational levels ranged from a low of 10% to a high of 52%. *At least bachelor's degree* educational levels ranged from a low of 5% to a high of 43%. *Graduate degree* graduate rates ranged from a low of 1% to a high of 10%.

Results of the Qualitative Interview Research, Based on Ely's Conditions

In this section, the qualitative interview data results are described. Because the qualitative interviews focused on director views, many direct interview quotes are included in this section, to support the research assertions. The qualitative data is organized with headings to address each of Ely's eight principles of implementation: (1) dissatisfaction with the status quo, (2) time, (3) adequate resources, (4) knowledge and skills, (5) rewards or incentives, (6) participation, (7) commitment, and (8) leadership (Ely, 1990, 1999; Surry & Ensminger, 2003).

Dissatisfaction with the Status Quo

Dissatisfaction with the status quo refers to an emotional discomfort on the current state. This can result from subjects' beliefs that current processes or technologies are inefficient or ineffective. Dissatisfaction can be based on an innate feeling, or induced by a marketing campaign (Ely 1990, 1999; Ensminger, et al., 2004; Surry & Ely, 2001; Surry & Ensminger, 2003).

All 13 directors tended to have positive feelings about the need for educational technology and ETPD. They felt that educational technology is important for student engagement. The directors stated that students are accustomed to gadgets, computers, and reading on screens, so it is important to use technology to engage students. This view was exemplified by the following interview quote, "I think it makes a significant difference in student engagement. Kids are very interested in technology applications and the use of technology because that's the world in which they are immersed".

Four of the *directors in sites without 21st CCLC ETPD* noted that teacher attitudes could interfere with educational technology usage or ETPD. If teachers were satisfied with their current teaching methods, they were less likely to respond to ETPD. As one director stated, "teachers may not agree with the theory or the teachers may not be willing to give up traditional methods". Another director noted that "the teachers may not see the reason for using educational technology, because they feel that the tried and true way is better. So you are setting up training for them, but they already have their minds made up".

All 13 of the directors felt that their programs should incorporate educational technology and ETPD. However, two *directors in sites with 21st CCLC ETPD* and four *directors in sites without 21st CCLC ETPD* raised reasonable concerns about the emphasis on educational technology in the sites. They emphasized that students first need critical thinking skills, to understand that computers are a human construction. One director claimed that excessive technology use can degrade mathematical skills and research skills, because the technology does all of the work. The director stated that students then lose the ability to

conduct traditional inquiry, using books and libraries. Another director stated that adults need to be aware of ergonomic needs and physical effects on students, such as eyestrain, back strain, and neck pain.

Two *directors in sites with 21st CCLC ETPD* and four *directors in sites without 21st CCLC ETPD* also questioned whether sites were using educational technology in order to appear progressive, instead of focusing on actual learning. Sites may have been using educational technology, especially assessment or diagnostic programs, in order to gain student data (for testing or sorting students). In this way, technology was being used mainly to suit the needs of staff and 21st CCLC reporting requirements. Student learning may not have been the focus of the educational technology use. This view was exemplified by this quote:

> My biggest frustration is that in some cases it does not encourage the kind of inquiry or critical thinking necessary in and of itself. The technology can be good, there's no question about that, but what is missing is when the technology simply becomes a sort of crutch. Or it's an easy way out because students can just hit a few keys and information is there. Not just the students, but staff as well.

Two *directors in sites with 21st CCLC ETPD* and three *directors in sites without 21st CCLC ETPD* discussed the distinctions between engagement and learning. They questioned whether educational technology was actually teaching students, or if the students were just responding to the novelty. As these directors stated, just because the students are interested, it does not mean that they are actually learning the subject material. These directors emphasized that we need to pay attention to the learning effects of educational technology.

> Yes, our students have improved. But do I think it is because of the technology? No! People have different backgrounds, and some confuse engagement with learning.

> They see the fancy colors, and they think that increases student independence. If it is learning, they may not be learning the subject matter, but just learning the application.

One *director in a site with 21st CCLC ETPD* noted that in terms of student achievement, it was important to distinguish between assessing learning and assessing educational technology use. This director stated that student achievement may not be attributable to technology, and achievement should not be measured solely by test scores. However, the director went on to say that technology can help with presentations and data gathering; in those respects, technology can help with student achievement.

All 13 of the directors felt that other neglected academic areas needed to gain more attention. They agreed that there is a huge societal emphasis on educational technology. The directors noted that this could negatively affect other academic areas such as music education, character education, and physical education. One director stated that sites should focus more on character development, stating that "we have students who don't get to talk to an adult, this is our chance in afterschool, since we have small classes. They don't necessarily need more technology, but maybe less of it and more human interaction". One *director in a site with 21st CCLC ETPD* and two *directors in sites without 21st CCLC ETPD* emphasized the importance of physical education, especially in this time of rising obesity rates. They stated that physical education should require more time, instead of more educational technology time, saying "we need to get the children moving more, not having them sit in front of a computer all the time".

All eight of the *directors in sites with 21st CCLC ETPD* mentioned educational equity issues. The 21st CCLC sites were designed for students who need academic intervention and assistance. These directors claimed that educational technology is necessary for these

students, since they need exposure to the same educational technology that their other classmates may have. One director described how the underprivileged 21st CCLC students benefited from having access to technology, because the students could turn in typed papers just like their wealthier counterparts. This director discussed how the 21st CCLC students may suffer in the future, if they are not taught to use educational technology early. The director said that technology helped with educational equity:

> It bridges that gap and helps those kids when it comes to computer technology and learning. If they do choose to go on in the future you don't want them having to learn what should have been learned already.

One *director in a site with 21st CCLC ETPD* discussed how ETPD is important for teachers, saying that teachers needed to have technology knowledge in order to adequately train students. This director believed that if a teacher is instructing students on an educational technology application, the teacher needs to have a strong knowledge base. That director also added, "they (students) don't know the curriculum, but they know the technology better than we do, how to use it, how to operate it. You want to make sure you match up a teacher that has the same amount of knowledge".

One *director in a site with 21st CCLC ETPD* was so dissatisfied with the status quo, he/she developed his/her own technology program. He/she conducted the ETPD teacher trainings and many of the student sessions. The students and teachers gained knowledge in using and evaluating educational technology equipment such as computers, webcams, multimedia equipment, etc. This director's philosophy was exemplified by his/her quote, "I

am just intrigued with it myself, so it just does me good to see youth exploring that. I think that's the way that society is going. I think you need to be more and more involved in it, more and more equipped with the latest training to be able to make it in the future".

Many of the themes in this section were already mentioned in the survey items. As a result of the qualitative information in this section, the survey was refined. I added an open-ended question that asked the survey directors to share their comments on ETPD in their sites and/or the survey. I also added *teacher attitudes about ETPD* to the question about barriers for ETPD.

Adequate Time

Adequate time is an important condition. This condition refers to an organization's ability to provide time for users. Time is used to learn new innovation skills or procedures for innovation use. Compensated time may be important for this condition. The user must devote time for innovation development and practice. This condition also includes the user's belief that time will facilitate innovation use (Ely 1990, 1999; Ensminger, et al., 2004; Surry & Ely, 2001; Surry & Ensminger, 2003).

All 13 directors expressed a desire for more training time. They felt that having more training time would help with designing and offering ETPD. The directors identified director/site coordinator/teacher schedule coordination as the main factor for reduced training time. One director noted that the 2009-2010 school year was especially challenging in terms of scheduling trainings, due to many snow days. These snow days resulted in many afterschool cancellations. Also, LEA-based 21st CCLC sites lost teacher work days, which were converted to student instruction days. One director stated:

> Well, for our own internal staff development we work around the schedules of our staff, most of whom are part-time. Finding a time that works for all of them when they are not supposed to be working with the kids is challenging. And of course the adverse weather has taken our teacher work days away.

Seven of the *directors in sites with 21st CCLC ETPD* and all five of the *directors in sites without 21st CCLC ETPD* expressed frustration at the amount of duties that decrease training time. 21st CCLC directors, site coordinators, and teachers had many other responsibilities. 21st CCLC directors had a demanding job, which required them to work on scheduling, coordination, billing, training, program evaluation, compliance requirements, reporting, and many other tasks. Site coordinators (in 21st CCLC programs with multiple locations) worked with regular on-location oversight, informed teachers, gathered student data, evaluated programs, assisted the director, etc. Teachers organized lesson plans, taught students, assessed students, etc. Many site coordinators and teachers also worked in the regular school-day setting. As a result, all of the 21st CCLC workers were extremely busy. The afterschool programs usually only operated for three hours a day or less, and most of that time was spent in direct academic instruction. As one director stated:

> They have so much going on that I feel sometimes overwhelmed, and like maybe we have too much going on. We need to focus on something. Well, and not just that, but we have so many programs in the after school that we're trying to squeeze in. Where are we going to fit it? Because you only have three hours a day.

All eight of the *directors in sites with* 21st *CCLC ETPD* and four of the *directors in sites without* 21st *CCLC ETPD* felt that state and regional trainings should be more local and site-based. Local and site-based trainings would help with the problem of limited time. The

directors said that receiving local trainings would help with reducing travel times and time devoted to logistical travel planning. They also asserted that with local training, the training would be more customized, instead of generic to the state of North Carolina. One director strongly expressed this sentiment, saying that with a local training, he/she could invite community partners to attend:

> Training should be more regional, less consolidated at the state level, more sensitive to actual needs that staff members have expressed rather than generic needs that somebody unknown has identified. It should be more accommodating to the inclusion of our community partners.

All five of the *directors in sites without 21st CCLC ETPD* claimed that the needs for other professional development were more immediate than the need for ETPD. Directors had to spend a large amount of time training staff on 21st CCLC requirements, curriculum issues, students, site rules, etc. Two of the *directors in sites without 21st CCLC ETPD* were in new sites. In the newer sites, these directors were spending most of their work time on program implementation issues. These issues involved staffing, curriculum development, refining the schedule, working with transportation issues, etc. The new sites were struggling to implement training, including ETPD. As a result, educational technology and ETPD were not the highest training priorities. As one director stated, "we are just trying to get everything going right now, and it is a lot. We will get around to technology and trainings". Limited time was a major factor in this training allocation.

All five of the *directors in sites without 21st CCLC ETPD* had multiple sites that were spread out. The multiple sites created logistical problems for training, such as traveling time for site coordinators and teachers. This hindered time for training. As one director stated, "the only other thing I could think of might be that there was some way funding could allow the staff to get five hours of training in a month. And to do it at their locations. You know, instead of having to travel away or something like that".

All eight of the *directors in sites with 21st CCLC ETPD* set aside specific 21st CCLC training times. For these directors, it was also helpful to establish a yearly 21st CCLC calendar of trainings, including ETPD trainings. As one director noted, "we have our own calendar for professional development for 21st Century. They register just like they do for their regular staff development". This helped site coordinators and teachers to plan for attendance. Some directors focused on using summer days to establish 21st CCLC trainings. By scheduling during the summer, the directors reduced the number of competing demands and interruptions. One director emphasized this, saying:

> Well what we're going to do is even before we start at the school, we have a week of teacher prep, where they get to come in and prepare their lessons and get started. So we would use that as part of our pre-training, prior to starting our summer program or even our regular year program.

Directors expressed concerns about finding time to take site coordinators and teachers to trainings. Seven *directors in sites with 21st CCLC ETPD* directors and three *directors in sites without 21st CCLC ETPD* stated that they preferred trainings where the site coordinators

and teachers could attend together. In this way, everyone could hear the same message, and the trainings were usually more effective. One director mentioned that most of the conference and state level trainings took place in times that conflicted with program delivery:

> We have had training on weekends, but the training that is provided at the state level or in state conferences that are relevant to what we're trying to do is very inconvenient for us because it conflicts with program delivery time.

Four of the *directors in sites with 21st CCLC ETPD* and two of the *directors in sites without 21st CCLC ETPD* wanted more LEA assistance with the scheduling of afterschool training. They cited school training and 21st CCLC training conflicts as a major problem. When school-day teachers were busy with school day trainings, the 21st CCLC trainings were not a priority. One director discussed how 21st CCLC trainings were subordinate to LEA trainings. Since the school day teachers had so many mandatory trainings, the 21st CCLC trainings were hard to schedule.

Seven *directors in sites with 21st CCLC ETPD* and all five of the *directors in sites without 21st CCLC ETPD* cited the problem of teacher fatigue. They discussed how teacher fatigue often led to attrition and high staff turnover rates. When teachers were tired, ETPD was difficult to schedule and to implement well. One director discussed how, "the only time you could have training is once the site closes. We're starting our training at 6:30 at night and they're already tired". Another director discussed the difficulties in using school-day teachers, because of their high fatigue factor. As the director stated, the school day teachers have taught all day, then they worked in afterschool until around 6:00 P.M. on many days. According to that director, "To try to ask them to stay over for professional development is

almost like pulling teeth with them, because they've already been here 10 to 12 hours". One *director in a site without 21st CCLC ETPD* noted that the fatigue issue was unrelated to teacher dedication. Many of the teachers, especially in the LEA settings, worked during the school day. These teachers were devoted to the afterschool mission, but trainings added another task to a long day, as he/she stated, "I'm thinking of my current staff and they're wonderful. I don't know how they do it because they're so tired. And they're wonderful but to try and train them is hard".

Three *directors in sites with 21st CCLC ETPD* used non school-day site coordinators and teachers, since school day teachers were usually so busy. Non school-day site coordinators and teachers included volunteers, college students, or other individuals who were looking for part-time employment. These workers had background checks before working with the students. These directors stated that the non-school day staff often worked better with the students, because they used different teaching approaches. One director explained how this benefited the students, because the non-school day staff was usually able to help a struggling student, if the school-day teacher could not.

For one *director in a site with 21st CCLC ETPD*, the non-school day teachers were local college students. According to the directors, these college students offered additional enrichment, using more creative approaches. These creative approaches involved music and art activities, educational technology, and movies. According to this director, the students responded well to the younger college student group:

> Regular teachers may handle the afterschool environment like their regular classroom. If they are not creative during the day, then they may not be creative in afterschool. The college tutors work very well. They teach all the standard subjects, too, math, science, and English. The college students engage well with them (students), it is good socialization.

Using non school-day teachers also helped one *director in a site with* 21st *CCLC ETPD*, with scheduling trainings and ETPD. Since the non-school day teachers were not obligated to attend LEA-based trainings, they had more availability to attend 21st CCLC trainings:

> We have the program from Monday to Thursday. We have the staff developments and meetings on Friday. The tutors are from a nearby college, so we don't have to deal with transportation issues and all that. It works out very well for us.

Many of the themes in this section were already mentioned in the survey items. As a result of the qualitative information in this section, the survey was refined. I added *little time for preparing activities* to the question about barriers to ETPD. I added *teacher fatigue and workload* to the question about barriers to ETPD. I added *teacher turnover and attrition* to the question about barriers to ETPD.

Adequate Resources

The third condition focuses on *adequate resources*. This refers to the availability and accessibility of innovation implementation resources. Resources include finances, equipment, hardware, software, materials, staffing, and technological support. These

resources support innovation implementation. This condition also relates to the organization infrastructure, and how that infrastructure supports the innovation (Ely 1990, 1999; Ensminger, et al., 2004; Surry & Ely, 2001; Surry & Ensminger, 2003).

During the course of the interviews, the 13 directors provided information on their afterschool curricula. In all 13 sites, the directors stated that their main curriculum sources involved books and standard materials. Educational technology was not the main curriculum source, or the main topic for trainings.

The 13 directors based the afterschool curriculum on various resources. Lesson plans and topics were based on North Carolina curriculum standards: EOCs (End of Course tests for high school courses), EOGs (End of Grade tests for grades 3-8 and the NC writing assessment for grade 10), and the North Carolina Standard Course of Study. The main materials included non-educational technology resources, such as the North Carolina End of Grade COACH workbooks, Options Publishing Reading and Math Intervention Kits workbooks/materials, Pearson Prentice Hall's Passing the North Carolina EOC workbooks, and the Real World Series books. Two directors mentioned the 21st CCLC Handbook (provided by NCDPI) as being a useful guide to program implementation. According to these two directors, the handbook provided good guidelines for establishing the afterschool curriculum.

Several *directors in sites with 21st CCLC ETPD* (in LEA-based programs) mentioned how their principals and schools provided feedback on the 21st CCLC program curriculum. In these cases, the school determined the curriculum, and the afterschool program focused on

those academic topics. The afterschool program worked to enhance what is taught in the schools. This affected the types of technology that were used and the frequency of ETPD trainings, as shown by this quote:

> I work with the principals, heads, and department chairs. They tell us what to study. The teachers use pacing guides, and the tutors understand how to use them too. They give us a plan of what the student needs to work on. This helps us know what to train for.

The afterschool curricula were also based on NCDPI evaluation realities. In the annual reports, the 21st CCLC sites had to show numerical academic test gains, especially in reading and math. As a result, for all 13 directors, educational technology use involved mainly prescriptive, academic test preparation curriculum programs. Skill building and academic mastery were the main goals of these programs; thus, ETPD was also geared around these goals. The directors cited the following programs: FOCUS, Study Island, Academy of Reading, Academy of Math, Voyager, SuccessMaker, Read 180, and Classcapes. The directors noted the benefits of using these types of programs: ready-made lesson plans, ETPD curriculum and scripts, user-friendly interface, support services, prescriptive assessments, and diagnostic assessments. As the result, the curriculum and resulting ETPD fit the evaluation structure of 21st CCLC, which focused on assessment and accountability for student scores.

Study Island was the most frequently cited technology-based academic program. Seven *directors in sites with 21st CCLC ETPD* cited the Study Island Professional Development Toolbox as being helpful for ETPD. It contained videos, trainer prompts, and

self-paced tutorial instruction. Users enjoyed online training and direct support, including the options of conference call trainings or webinars. Users could also gain on-site training and online training, for an additional fee. For North Carolina users, Study Island was customized to the objectives from the North Carolina Standard Course of Study. The directors especially appreciated this feature, because it simplified curriculum alignment.

For all 13 directors, computer usage constituted the main use of educational technology. For both *directors in sites with 21st CCLC ETPD* and *directors in sites without 21st CCLC ETPD*, websites such as Funbrain, the Smithsonian website, the Discovery Channel, and Nickelodeon were used. However, most of the computer websites were also used in conjunction with the aforementioned test preparation curriculum packages. The *directors in sites with 21st CCLC ETPD* noted greater use of educational technology. *Directors in sites with 21st CCLC ETPD* cited additional educational technology resources such as wireless networks, calculators, digital cameras, Smartboards/Promethean Boards, cell phone activities, and Microsoft Office programs (especially Powerpoint, Excel and Word). Educational programs such as Kidz Math, Kids Lit, Nova Net, and educational games such as Jeopardy, and Accelerated Reader were noted for use by *directors in sites with 21st CCLC ETPD*. Three *directors in sites with 21st CCLC ETPD* described their use of interactive educational technology projects, with GPS projects, robot car construction projects, science equipment projects (such as examining and tracking soil and air quality), local investigative research projects, music creation software, and local service projects with multimedia and website creation. All of the *directors in sites without 21st CCLC ETPD* expressed their desires for additional educational technology, especially Smartboards/Promethean boards.

All 13 directors expressed desire for more funding for technology and trainings. The directors expressed concern about finances, with one saying "we have a staff meeting once a month, and that's really all we can budget for". The directors felt that more ETPD funding would facilitate staff ETPD use, because the site coordinators and teachers would be compensated for their time. The directors felt that compensating the staff for their time would help with motivation for trainings and ETPD.

Five *directors in sites with 21st CCLC ETPD* (whose sites were based in LEAs) reported more established infrastructure, due to LEA resources. These 21st CCLC sites had more access to computer labs and equipment. These sites also used the technological support (such as tech support) in the LEA, if it was offered to the 21st CCLC program. One director stated, "as soon as we started, we had everything we needed to start using technology, computer labs, equipment, and other things". LEA curriculum support also facilitated trainings, including ETPD. These *directors in sites with 21st CCLC ETPD* sought to align 21st CCLC trainings with the master district training calendar, as one director stated, "I talked with the curriculum person today. He has invited me to come to their meetings when they plan for staff development".

For four of the *directors in sites with 21st CCLC ETPD* in LEA sites, LEA support made a huge difference in teacher attitudes. Being established in the school helped the 21st CCLC program to gain respect from the other staff and teachers. As one director stated, school support provided access to resources, space, and equipment. Also, LEA support promoted more positive teacher attitudes about the 21st CCLC program. This director claimed:

> Being with (name of prior employment) there were community based programs, trying to get into the school system. A lot of times the school systems didn't necessarily want you there, or sharing the space of teachers. I don't know what it was, but you just couldn't get that buy in from the teachers. So now, being in a program that the LEA actually supported and sought after, I am a part of the school system.

Three *directors in sites with 21st CCLC ETPD* chose 21st CCLC teachers based on their potential. These directors chose teachers based on qualifications and recommendations. One director required an application process for prospective 21st CCLC workers, saying "when we solicit help from teachers they have to submit a proposal to work. And so we select them based on that and principal recommendations. It's not just like, a 'get 15 kids and you can work' kind of thing. And then we pick the teachers who have the best plans or the best programs". These directors realized that training is only as effective as the quality of the teachers. This selection process reduced the number of teachers with negative attitudes about trainings or ETPD. These directors stated that professional development could only help in conjunction with the teacher's quality. According to these three directors, good teachers were more likely to have a passion for the job, and to integrate professional development and ETPD.

Many of the themes in this section were already mentioned in the survey items. As a result of the qualitative information in this section, the survey was refined. I added *music creation software* to the questions about ETPD software and programs. I also added *graphing calculators*, *GPS equipment*, *Smartboard and/or Promethian Boards*, *learning with cell phones*, and *wireless networks* to the survey question on resource ETPD.

Knowledge and Skills

With the *knowledge and skills* condition, users must have (or acquire) skills and knowledge for innovation implementation. This condition also reflects users' feelings about the innovation, especially users' beliefs about being able to develop the necessary skills. Training is necessary for knowledge and skills of the innovation. This also involves assessing users' current levels of knowledge and skills (Ely 1990, 1999; Ensminger, et al., 2004; Surry & Ely, 2001; Surry & Ensminger, 2003).

All 13 site directors expressed the desire for more communication from top officials on evaluating resources. They specifically cited the need for information on technology resources and ETPD. Directors said it would be helpful to get more information from NCDPI and LEA officials on technology and ETPD in regional and state trainings. They stated that this information would help them, because they spent a large amount of time fielding vendor offers and evaluating resources. One director stated:

> But I mean you have to really go out there and search, or you depend on the magazines that come in the mail to kind of tell you what's available out there. But I think from a higher level, if the school district that you're in would really do some investigation and some homework on technology, and then filter it down to the schools and say, this is what's out there, this is available, you know, and then you could have a pool of things. But otherwise you're kind of like out there in this big ocean just fishing around for what's good and of course they (the vendors) say it is the best thing ever.

According all 13 of the directors, NCDPI and LEAs needed to provide more director training on evaluating and customizing programs for 21st CCLC. One director stated that many other directors were relying on vendor information. However, this vendor information

may not have provided full information for directors. Also, this director stated that many other directors were not fully qualified to serve as curriculum evaluators.

> Well, it seems to me at the state level, that I would be looking for programs that are already developed that have specific modification points that help to customize locally the curriculum and the delivery. So that people like me out here don't have to do what I am doing right now, which is searching and evaluating curricula that's available out in the educational world, and then determining its possible modifiable use in an after school environment. I know from having done this for several years that there are a number of people who are doing that sort of research without the qualifications to make an informed decision.

Four of the *directors in sites without 21st CCLC ETPD* expressed concerns about student safety with computer use. This was a deterrent to extensive computer use. They felt with using computers, students often wandered away from the educational sites in order to locate inappropriate sites. Teachers spent time keeping the students on task, instead of fully teaching. As a result, this defeated the educational purpose of using the computers, as one director stated, "you have to spend so much time making sure they are on task, it takes away from the teaching time. The teacher is babysitting them to make sure they are on the right websites".

All eight of the *directors in sites with 21st CCLC ETPD* sought out training opportunities. The most frequently cited opportunities included NCCAP (North Carolina Center for Afterschool Programs) afterschool trainings, 21st CCLC regional trainings, 21st CCLC Summer Institutes, and local LEA trainings. Many of these directors especially sought summer training opportunities, so that they could train on topics along with the site coordinators and teachers. These directors also used curriculum materials that provided

ready-made training materials, such as training CDs. As one director stated, "the Focus package comes with a staff development piece and that's on CD-ROM. So there's a CD-ROM for staff development. And it shows how to best utilize it".

Seven of the *directors in sites with 21st CCLC ETPD* frequently hired outside consultants to help with ETPD. This helped to alleviate the time and preparation demands on the directors. The Mop Top Shop professional development was noted as a useful way to incorporate ETPD. The Mop Top Shop consultant traveled to sites, and also held weekend workshops for teachers and/or students. *Directors in sites with 21st CCLC ETPD* also hired part-time help, such as a curriculum assistant, to assist with trainings, as one stated:

> Until this year we had a curriculum assistant on staff. We gave him/her like six to ten hours a week to research curriculums, ideas, programs, assess students, see where they were on reading level wise, what grade level they were on in math, and any needs that specific students would need. That was very helpful.

All eight of the *directors in sites with 21st CCLC ETPD* focused on tailoring the professional development (including ETPD) to afterschool. They felt that afterschool programming should include more fun activities, to engage the students. As a result many school-day teachers who work in afterschool needed to be trained for different academic approaches. This view was exemplified by this quote:

> After school is a totally different gambit than regular day. You have to revamp after school so much that kids want to be there. It's an environment for them to learn. I think that's where most of our professional development targets. It's just trying to get teachers to focus on the after school in a totally different manner.

Many of the themes in this section were already mentioned in the survey items. As a result of the qualitative information in this section, the survey was refined. I added *summer institutes, 21st CCLC regional training,* and *vendor/commercial training by outside consultants* to the questions about ETPD models. I also added *list of programs/software/websites specific to 21st CCLC* to the question about ETPD support.

Rewards and Incentives

The fifth condition deals with rewards and incentives. Incentives provide a stimulus for action, with the expectation of a reward. Rewards are given for meeting a performance standard. Incentives and rewards motivate innovation users. These can be either intrinsic or extrinsic. Reward and incentives vary from user to user. (Ely 1990, 1999; Ensminger, et al., 2004; Surry & Ely, 2001; Surry & Ensminger, 2003).

All 13 of the directors expressed a desire for rewards and incentives. Ten of the directors cited extra pay as the top motivator. These directors claimed that if extra pay was allowed, they would try to conduct extra professional development and ETPD on weekends and during the summer. Food (during training sessions) was also cited as a great motivator, by three of the directors. Two of the directors stated that offering extra technology equipment would also serve as a great incentive. According to the directors, rewards and incentives would spur greater participation in trainings, including ETPD.

One *director in a site with 21st CCLC ETPD* found that CEUs (Continuing Education Units) served as a great teacher motivator. These credits were useful to school-day teachers, because the hours of training time were applicable for teacher state license renewals. The director had to undergo extra effort and trainings in order to provide this incentive, saying

"what I've done this year is made a strategic effort to provide CEUs for training. But I had to go through a training process myself to figure out how trainings need to be structured. Some teachers will even do that, even without paying them to come to staff development".

Many of the themes in this section were already mentioned in the survey items. As a result of the qualitative information in this section, the survey was refined. I added *pay for attending ETPD* to the question about incentives for promoting ETPD.

Participation

The condition of *participation* involves decision-making and communication among innovation users and other stakeholders. By contributing ideas and views, users and other stakeholders develop a sense of innovation ownership. User representatives may provide innovation information, if it is difficult to get feedback from all potential users, (Ely 1990, 1999; Ensminger, et al., 2004; Surry & Ely, 2001; Surry & Ensminger, 2003).

All five of the *directors in sites without 21st CCLC ETPD* described problems in terms of site coordinator and teacher participation. Due to the intense nature of the job, it was difficult for these directors to find time for meaningful discussion and program examination. One director stated, "I can't find time to get lots of teacher feedback. We are all working hard, and it is hard to find time for meetings and such".

All eight *directors in sites with 21st CCLC ETPD* noted that it was very important to create a climate of participation. The directors claimed that the site coordinators and teachers provided the best recommendations to directors, since they were heavily involved in research and lesson preparation. Teachers were directly involved with the students, the curricula, and the lesson plans. Therefore, the directors stated that teachers provided valuable information on the most effective student programs. These directors made it a priority to conduct

impromptu, quick discussions with the site coordinators and teachers. Even with little time for formal meetings, these short discussions provided information. This facilitated program participation.

Three *directors in sites with 21st CCLC ETPD* directors used their other staff members, specifically site coordinators and teachers, to conduct some volunteer ETPD trainings. The site coordinators and teachers also had ETPD knowledge, and they shared it by conducting trainings with their peers. This helped the directors, but it also promoted staff participation in site needs. The directors stated that the resulting collaborative practice sessions yielded the best staff participation. If a staff member had an interest or an avocation, the director asked the staff member to conduct training for the others. One director said that most of their ETPD trainings were done this way, with in-house training. As the director quoted, "for instance, we have just hired a staff member who is a film producer. Then at our most recent staff development he/she did an overview of how lessons on film production and then the actual production of films could be accomplished with ease". The second director described how his/her site's previous curriculum director provides free ETPD for staff. The third director discussed how his/her site's science teacher conducts science ETPD training and projects.

Many of the themes in this section were already mentioned in the survey items. As a result of the qualitative information in this section, the survey was refined. I added *an on-site person to lead ETPD implementation* to the question about support for ETPD. I added *ETPD was designed with collaborative practice sessions* to the questions about ETPD characteristics.

Commitment

Commitment refers to user support by leaders and powerbrokers. This condition involves user perceptions of leader commitment to innovation implementation. Leader endorsements can promote innovations. However, simple verbal endorsement of the innovation by leaders does not constitute full commitment. Forms of commitment can include personal communication, resource allocation, and active involvement in innovation implementation (Ely 1990, 1999; Ensminger, et al., 2004; Surry & Ely, 2001; Surry & Ensminger, 2003).

All 13 directors desired more communication between other directors and with NCDPI: They specifically cited the need for a discussion forum or frequently updated website that would allow for communication. They declared that this additional communication would help with trainings, educational technology, and ETPD. One director noted, "we could find out what other sites are using, and then see if it would work for us. We could leave messages for others if we needed to warn them about a certain program. We could learn about new programs and trainings from other directors".

Five *directors in sites with 21st CCLC ETPD* (in LEA-based centers) and four *directors in sites without 21st CCLC ETPD* (in LEA based centers) expressed desire for more LEA support in some areas. For 21st CCLC programs in LEA sites, LEA support was crucial to the success of the program. As one director stated, "what we came to understand, and even more so this year, that the relationship with the administration at the individual schools and the staff coordinators was critical, was central. And so we have been intentional in every step of the way to try to make sure that was cemented, real, and nurtured".

Five *directors in sites with 21st CCLC ETPD* (in LEA-based centers) and four *directors in sites without 21st CCLC ETPD* (in LEA-based centers) stated that additional LEA support should come in the form of financial support. All 21st CCLC directors were expected to locate funding to sustain their programs after the initial four years of funding had ended. This had implications for educational technology and ETPD. If directors had to cut costs to sustain their programs, then educational technology and ETPD may not have been a priority. (Note: NCDPI does allow ending sites to apply for continuation funds. However, the sites have to go through the application/acceptance process. Acceptance is not guaranteed.) Sustainability presented challenges for 21st CCLC ETPD, as one director noted, "I want to include technology and the trainings in future years, but I don't know if the costs will fit in our sustainability plan. We are hoping that our district will agree to contribute some funds. If not, then I have to cut it back".

According to two *directors in sites without 21st CCLC ETPD*, some LEAs needed to fully trust 21st CCLC programs with resources and facility access. One director discussed how the trust issue affected his/her 21st CCLC programs, because the programs did not get to use some educational technology equipment. This trust obstacle affected access to some of the school resources. One director stated, "you could have access to the labs, but you might not be able to have access to the smart boards".

Many of the themes in this section were already mentioned in the survey items. As a result of the qualitative information in this section, the survey was refined. I added *21st CCLC websites with information* and *information about the quality and effectiveness of ETPD software/websites* to the question about ETPD support.

Leadership

Leadership, the eighth condition, refers to active involvement by daily immediate supervisors of users. It also refers to the level of ownership and support given by the leaders who will manage the daily activities of those using the innovation (Ely, 1999, 1990). The enthusiasm of these leaders directly affects the motivation of the users of the innovation. Immediate supervisors must provide support and encouragement, answer questions, address concerns, assist users, and serve as role models (Ely 1990, 1999; Ensminger, et al., 2004; Surry & Ely, 2001; Surry & Ensminger, 2003).

Directors served as immediate supervisors of site coordinators and teachers. All 13 of the directors showed leadership by serving as trainers for site coordinators and teachers. By conducting the trainings, directors often cut training costs. This helped with budget issues, because the director did not have to pay outside consultants or pay for additional curriculum packages. As one director stated, "it's my job to train our staff how to use it, and then I instruct my staff to make it happen". One *director in a site with 21st CCLC ETPD* discussed how he/she conducted some ETPD trainings based on a grant that he/she received from the UNC School of Government, North Carolina Education Consortium. It focused on community service and in-service projects. Students in fourth grade through eighth grade researched area non-profits. The students used computer labs to generate information about community needs. Students had to create their own project that would benefit those non-profits. The director also conducted teacher and student trainings on critical thinking with Internet usage. The students used Internet information to develop a list of questions for the executive directors of the non-profits. The students then received the chance to ask executive directors specific questions about the non-profit programs.

For all eight *directors in sites with 21st CCLC ETPD*, seeking partnerships was important for their leadership role. Partnership resources helped the director with providing educational technology and ETPD for students and teachers. The directors claimed that the partnerships provided well-planned, organized, and structured ETPD for the sites. For example, the Appalachian State 5th Dimension program was cited by one *director in a site with 21st CCLC ETPD*. The program operated through the School of Education at Appalachian State University. The director's sites received 10 to 12 technology tutors on Mondays and Wednesdays. The director stated that the tutors were extremely well-prepared, and the students responded well. This service was provided free for afterschool sites. Partnerships with county cooperative extensions and organizations such as 4-H and the YWCA/YMCA also provided training opportunities for directors and teachers. The North Carolina Arboretum also contributed science workshops for one program. One *director in a site with 21st CCLC ETPD* noted Duke University's TechExcite program as an important university partnership. This outreach program offered director training, materials, lesson plans, and volunteer tutors to teach students about technology. The director cited TechExcite as an exemplary, well-organized program that promoted student interest in educational technology and other subjects.

Seven of the *directors in sites with 21st CCLC ETPD* also sought to use consortium resources for ETPD. The directors also claimed that the consortiums provided organized and structured ETPD resources. Several directors mentioned the Afterschool Tool Kit. This web-based site was funded by the Department of Education through the 21st Century Community Learning Center program. The directors cited the link within the Afterschool Tool Kit site for the SEDL (Southwest Educational Development Laboratory) Virtual

Academy for Afterschool. This website provides lesson plans, multi-media resources, additional resources, and videos, all designed specifically for afterschool academic use. The Professional Development Toolkit in the Virtual Academy was cited as helpful for planning and implementing afterschool trainings, including ETPD trainings.

None of the 13 directors discussed strategic implementation plans that focused on educational technology or ETPD. However, support for educational technology and ETPD was clearly expressed on the program websites of seven *directors in sites with 21st CCLC ETPD*. Educational technology and ETPD were also listed as vital program elements on many of the directors' program brochures and handouts.

Many of the themes in this section were already mentioned in the survey items. As a result of the qualitative information in this section, the survey was refined. I added *director training of the afterschool teachers* and *training by a professional institute or organization* to the questions about ETPD models.

Reporting of the Quantitative Survey Data

For the quantitative section, *data reduction* involved reporting quantitative data via descriptive statistics. In this section on quantitative survey results, tables were used to pictorially describe the quantitative survey results, in a *data display* approach (Onwuegbuzie & Teddlie, 2003). The survey data provided more comprehensive statewide data on 21st CCLC ETPD implementation.

During the qualitative interviews, distinctions emerged between *directors in sites with 21st CCLC ETPD* and *directors in sites without 21st CCLC ETPD*. This distinction helped to inform the quantitative survey development. Some of the survey questions were branched, in order to address the separate ETPD implementation issues between *directors in sites with 21st*

CCLC ETPD and *directors in sites without 21st CCLC ETPD*. The research question that framed these quantitative results is: According to North Carolina 21st CCLC directors, what is the current state (and needs) of ETPD implementation in 21st CCLC sites (as determined by a statewide survey that was informed by the results of the 13 qualitative interviews)? The tables for each of these survey questions are located in Appendix H.

Characteristics of the Quantitative Survey Participants

I used the email list that was provided by the NCDPI consultants. This list contained 103 emails. I sent the survey link to all 103 emails. Ten individuals wrote to me, and indicated that they were not directors. They did not complete the survey. So, they were not included in the count of potential director respondents. A total of two emails returned with undeliverable status, meaning that these emails did not belong to 2009-2010 directors. Therefore, I did not include these emails in the count of potential director respondents. One individual opted out of completing the survey, or receiving reminder emails. This person clicked on the "opt out" link within the survey introduction letter. I did not count this individual in the count of potential director respondents. This left 90 potential director respondents.

A total of 47 directors responded to the survey questions between May 13th, 2010, and June 11th, 2010. The survey asked the directors to complete 18 questions. The survey link was emailed three times. Survey responses were based on the percentages of the 47 actual director respondents. This represented a response rate of 52.2% (47 out of 90).

For some of the survey questions, the director respondents refrained from answering the survey questions. There was no distinct pattern to the missing responses. There are several possible explanations. Some directors may have been uncomfortable answering some

of the questions. Some directors may not have understood certain questions, so they skipped those questions. Also, some directors may have gotten tired of answering survey questions, so they skipped over some questions or stopped answering questions.

Demographics Section of Survey: Demographic Questions for All Survey Respondents

The results of the Demographics Section are being discussed first. The demographic questions were at the end of the survey. However, this section will begin with the first question for the Demographics Section.

In the Demographics Section, Question 1 asked: D*o you have more than one site?* For this survey question, directors had to indicate whether they had more than one site in their 21st CCLC program (Table H1). Directors could only select one option (out of yes or no) for this question. Most of the responding directors (63.8%, or 30) had more than one site. Only 25.5%, or 12 survey directors, indicated that they only had one site. This result means that most of the survey directors were dealing with the logistics of managing multiple 21st CCLC sites. According to the qualitative data, this usually made offering ETPD more difficult and costly.

In the Demographics Section, Question 2 asked: *Which best describes your 21st CCLC site(s)? (Select all that apply.)* This question asked survey respondents to identify the type of sites they were working with (Table H2). They could select individually from the following options: *public school- based site, charter school-based site, church-based site*, or *non-church community center*. They could also select all of the options that identified their sites, if their sites had multiple site groupings. There was also the option of specifying an additional response, in an *Other, please specify* response box. The majority of respondents' sites were exclusively *public school-based* (57.4%, or 27). The second highest category for

respondents' sites was *non-church community center*, with 12.8% (6 respondents). In total, over 2/3rds of directors (68.1%) reported sites that were affiliated with public schools. This may have had implications for ETPD availability. According to the qualitative data, public schools (or LEA based) 21st CCLC sites usually had more educational technology and ETPD resources that were provided by the public schools.

In the Demographics Section, Question 3 asked: *What is/are the grade level(s) of your site(s)? (Select all that apply.)* In this question, survey directors had to choose the grade levels that best described their 21st CCLC sites (Table H3). They could select individually from the following options: *elementary school, middle school, and high school*. They could also select each of the options that identified their sites, if their sites had multiple grade levels. Just over half (51.1%) of responding director sites were represented by multiple grade level sites. The most common multiple grade level site was *elementary and middle school and high school* (36.2%, or 17). This may have had implications for ETPD offerings. Directors in multiple grade level programs had to address the varied ETPD needs of sites with different grade levels. Having different grade levels may have also fostered the need for different types of educational technology. For example, Smartboards and simple GPS projects may have been useful for all grade levels; however, complex GPS projects would have been more appropriate for middle or high school grades. Thus, the ETPD would have needed to address these different grade level applications. Of site directors with just one grade level type, *elementary* sites (19.1%, or 9) were the most common.

In the Demographics Section, Question 4 asked: *How old is your 21st CCLC program?* This question asked survey respondents to identify the age of their 21st CCLC program (Table H4). Survey respondents could select one of six choices. The question

asked for generic yearly answers, instead of specific program start dates. This approach was designed to maintain survey director and site privacy. The directors may not have been comfortable with a question that would identify their exact program start dates. Just over half (51.1%) of sites were less than three years old. This result means that most of the survey directors' sites may have been dealing with the early program implementation hurdles. The early years of a 21st CCLC grant are the most intensive. Establishing the program takes a great deal of time and resources. Therefore, directors have to do more work in newer programs to offer 21st CCLC ETPD.

In the Demographics Section, Question 5 asked: *How long have you worked as a director with the 21st CCLC program?* This question asked survey directors to identify how long they had served as a 21st CCLC director (Table H5). Survey respondents could select one of six choices. Over half of responding directors (59.6%) had been 21st CCLC program directors for two years or less. Therefore, just over half of the survey directors were relatively new to the requirements of the 21st CCLC director position. For 21st CCLC directors, the first two years usually involve a lot of on the job learning. Directors have to learn about not only the state programming requirements, but the local expectations from their staff, LEAs, or student needs. This has implications for 21st CCLC ETPD. Providing specific 21st CCLC ETPD information would be helpful to all directors, but especially to newer directors who are still learning about the context and job requirements.

In the Demographics Section, Question 6 asked: What is your office/school zip code? This question asked survey directors to provide their zip codes (Table H6). The respondents were allowed to type in their zip code into a response box. I analyzed the responses based on Census data, to determine whether the respondents were located in a rural, suburban, or

urban site. This approach was chosen in order to yield consistent and accurate results. If I would have asked the directors to self-identify their geographic designation, it may have been confusing. For example, one director might have viewed his/her suburban town to be a large urban center, compared to smaller surrounding towns. Or, one director might have described the geographic designation for his/her center's location as urban because it is in the downtown area, even if the actual town is geographically described as rural.

Rural school directors (36.2%) were the most common survey respondents, followed by *suburban* director respondents (34.0%). However, the actual number of *rural* site directors (17) was very close to the actual number of *suburban* site directors (16). Urban directors constituted the smallest percentage, 14.9%, with seven sites.

Technology Usage Section of Survey: Educational Technology and ETPD Questions for All Respondents

The Technology Usage Section of the survey asked educational technology and ETPD questions of all the survey respondents. In the Technology Usage Section, Question 1 asked: *Please enter information on the educational technology program(s) your 21st CCLC site uses. If you use more than one program, please list them all.* This question asked the survey directors to list the names of their educational technology programs into a response box (Table H7). Directors could enter one or more educational technology programs. The purpose of this question was to get a sense of all of the educational technology programs that were being used in 21st CCLC. As mentioned before, educational technology is not a focus area in the 21st CCLC NCDPI site evaluations. Therefore, this question provided information on the educational technology that the sites are using. This question addressed Ely's condition of *adequate resources* (types of ETPD programs).

A wide variety of educational technology programs were reported. Overall, 44 of the 47 (93.6%) directors listed one or more education technology programs. Many of the responses fit with the findings of the qualitative data, which stated that most 21st CCLC educational technology programs focus on academic test preparation software.

Study Island (34.1%, or 15) garnered the most responses for this question. Study Island was also the most common educational technology program cited in the qualitative portion of the study. The Study Island program is an online academic tutoring program. Therefore, Study Island fits with the 21st CCLC focus on academic test preparation software.

The generic response of *computers* was reported as the second most frequent response (22.7%, or 10). This shows that computer usage was considered to be educational technology. This term is generic, so computer usage could be have been complex, such as with critical thinking and research activities. Or, computer usage could have involved playing around on the Internet. I thought that this result was interesting. Directors may not have interpreted this question as asking for specific program names. However, this response may also show that computer usage is seen as sufficient for educational technology.

The third highest number of responses was with *Smartboards/Promethean boards* (9.1%, or 4). Smartboards/Promethean boards were cited by many of the 13 directors in the qualitative study. Therefore, this result also supports the findings of the qualitative data.

In the Technology Usage Section, Question 1.5 asked: *How does the program use educational technology?* With Question 1.5, survey directors were asked to describe how the program(s) (that they entered for Question 1) used educational technology (Table H8). Directors could enter one description or multiple descriptions. The purpose of this question

was to learn about the survey directors' reasons for using the educational technology programs that were named in Question 1. This question addressed Ely's condition of *adequate resources* (how ETPD programs use educational technology).

Overall, 41 of the 47 (87.2%) directors listed one or more methods of how their program uses education technology. *Interactive learning* (14.6%, or 6) and *promotes reading and math help* (12.2%, or 5) were the only two responses exceeding 10%. Many of the responses were related to the 21st CCLC focus on academic preparation, as seen by example responses such as *remediation aligned with classroom instruction* (7.3%, or 3), *preparation for End of Course/End of Grade test* (7.3%, or 3) and *benchmark assessment* (7.3%, or 3). This conclusion also supports the qualitative data. The third highest response was *entertainment/games* (9.8%, or 4). This was an interesting and unexpected result with variable interpretations. On one hand, the survey directors could have entered this response as a way of saying that the educational technology program was exciting and engaging to the students. However, it could also mean that the educational technology was being used to occupy the students and keep the students busy.

In the Technology Usage Section, Question 2 asked: *Does your site offer 21st CCLC ETPD?* This question asked survey directors to identify if their site offered 21st CCLC ETPD (Table H9). The respondents could select one option from three choices: *Yes, we offer trainings for the 21st CCLC site and teachers*; *No, we rely on the school day trainings that our teachers already receive*; and *No, we do not offer any ETPD.* In the qualitative data, it became apparent that there were differences between *directors in sites with 21st CCLC ETPD* and *directors in sites without 21st CCLC ETPD.* The 25 survey respondents who chose the first option (the *yes option)* for this question were designated as *directors in sites with 21st*

CCLC ETPD. The 21 survey respondents who chose the second or third option (the no options) for this question were designated as *directors in sites without 21st CCLC ETPD.* This question was important for determining if survey respondents would branch into the survey questions for *directors in sites with 21st CCLC ETPD* (questions on the current state of 21st CCLC ETPD) or the survey questions for *directors in sites without 21st CCLC ETPD* (questions on the needs of 21st CCLC ETPD).

Just over half (53.2%) of the survey respondents offered 21st CCLC ETPD trainings. This result was interesting and unexpected, especially since in Question 1 (Technology Usage Section), 44 of the 47 (93.6%) directors listed one or more education technology programs for site usage. This means that many of the survey respondents are using educational technology without program-specific 21st CCLC ETPD. This gap of offering educational technology without 21st CCLC ETPD should be addressed.

Current 21st CCLC ETPD Users Section of Survey: Questions for Directors in Sites with 21st CCLC ETPD

Twenty-five (25) directors reported currently using 21st CCLC ETPD. These directors were classified as *directors in sites with 21st CCLC ETPD.* These survey directors were asked about their site's current ETPD information in the following categories: ETPD models, software/program ETPD, resource ETPD, and ETPD characteristics. Responses from these 25 directors are found in this section.

Question 1 in the Current 21st CCLC ETPD Users Section asked: *Which model(s) of ETPD has/have your site participated in, for 21st CCLC?* This question asked *directors in sites with 21st CCLC ETPD* to identify which models of ETPD their sites had participated in

(Table H10). The purpose of this question was to determine which ETPD models were being used for sites with 21st CCLC ETPD. Survey respondents were allowed to select *Yes* or *No* in response to each of the options. This question addressed Ely's conditions of *adequate resources* (models of ETPD), *knowledge and skills* (types of ETPD opportunities), and *commitment* (partnerships and consortiums).

The top three ranking responses were *21st CCLC regional training* (80.0%), *director training of the afterschool teachers* (76.0%), and *workshops/conferences* (76.0%). These responses were also cited most often by the directors in the qualitative study. *Summer institutes* (40.0%) and *training by a professional institute or organization* (40.0%) were the only models receiving less than 50%. In the qualitative data section, these two models were only cited by the directors in sites that had extensive 21st CCLC ETPD. Therefore, it might be beneficial for other directors to seek summer opportunities and professional institute/organization ETPD, since these approaches work well for the directors in sites with extensive 21st CCLC ETPD trainings.

In the Current 21st CCLC ETPD Users Section, Question 2 asked: *Has your 21st CCLC site had ETPD on these types of software/programs?* This question asked *directors in sites with 21st CCLC ETPD* to identify the software ETPD their sites had participated in (Table H11). Survey respondents were allowed to select *Yes* or *No* in response to each of the options. The purpose of this question was to determine the types of software ETPD that were being used in sites with 21st CCLC ETPD. This question addressed Ely's condition of *adequate resources* (types of software/programs).

The top three ranking responses were *test preparation* (88.0%), *English/reading programs* (88.0%), and *math programs* (84.0%). These responses showed how the sites with 21st CCLC ETPD were focusing on academic and test preparation. Therefore, these results also supported the findings of the qualitative data. *Industrial arts programs* (8.0%), *simulations/virtual environments* (12.0%), and *music creation software* (12.0%), were selected by less than one-eighth of responding directors. These low percentages may indicate a need for these software ETPD topics. Although these software ETPD topics are not directly related to the academic and test preparation focus, these topics can still provide enrichment to the 21st CCLC students.

In the Current 21st CCLC ETPD Users Section, Question 3 asked: *Has your site had ETPD on these types of resources?* This question asked *directors in sites with 21st CCLC ETPD* to identify the resource ETPD their sites had participated in (Table H12). Survey respondents were allowed to select *Yes* or *No* in response to each of the options. The purpose of this question was to determine the types of resource ETPD that were being used in sites with 21st CCLC ETPD. This question addressed Ely's condition of *adequate resources* (types of ETPD on resources).

The top three ranking responses were *Smartboards and/or Promethean Boards* (60.0%), *digital camera/camcorder* (52.0%), and *wireless networks* (48.0%). In the qualitative data, the Smartboards and/or Promethean Boards were mentioned often for resource ETPD. Therefore, the result of this question also supports the qualitative data. *PalmPilots or other portable writing devices* (8.0%), *GPS Equipment* (16.0%), and *learning with cell phones* (16.0%) were each observed by less than 1/6th of responding directors.

These low percentages may indicate a need for these resource ETPD topics. These resource ETPD topics, although less common, can be used to provide academic instruction to the 21st CCLC students.

In the Current 21st CCLC ETPD Users Section, Question 4 asked: *The following is a list of ETPD characteristics. (Select all the ones that describe your site's ETPD.)* This question asked *directors in sites with 21st CCLC ETPD* to identify the characteristics of the ETPD their sites had participated in (Table H13). The purpose of this question was to learn about the characteristics of the ETPD in sites with 21st CCLC ETPD. Survey respondents were allowed to select *Yes* or *No* in response to each of the options. This question addressed Ely's conditions of *adequate time* (availability of ETPD), *knowledge and skills* (ETPD relevance to subject area and student learning), and *participation* (teacher input and collaborations).

The top five 21st CCLC ETPD characteristics were: *ETPD was related to subject area* (88.0%), *ETPD was appropriate to teachers' varying levels of knowledge* (76.0%), *EPTD was focused on how technology can improve student learning* (76.0%), *EPTD was accessible during evening/weekend hours* (60.0%), and *EPTD was planned or delivered with teacher input* (60.0%). In the qualitative study, for directors in sites with 21st CCLC ETPD, it was important for 21st CCLC ETPD to directly address the academic subject matter, instead of just teaching about the mechanics of the educational technology. The directors discussed the importance of the teachers' comfort levels. In the qualitative data, sites with the most 21st CCLC ETPD worked to provide alternate scheduling for ETPD, during evening and weekend hours. In these sites, teacher input was vital to 21st CCLC ETPD planning. Therefore, these survey findings supported the conclusions of the qualitative data.

Without 21st CCLC ETPD Section of Survey: Questions for Directors in Sites without 21st CCLC ETPD

Twenty-one directors reported not offering 21st CCLC ETPD. These directors were classified as *directors in sites without 21st CCLC ETPD.* These survey directors were asked about their site's ETPD needs in the following categories: ETPD models, software/program ETPD, resource ETPD, and ETPD characteristics. Responses from these 21 directors are found in this section.

In the without 21st CCLC ETPD Section, Question 1 asked: *Which models of ETPD would be helpful for 21st CCLC? (Select all that apply.)* This question asked *directors in sites without 21st CCLC ETPD* to identify desirable ETPD models (Table H14). The purpose of this question was to learn about the types of ETPD models that could benefit sites without 21st CCLC ETPD. Survey respondents were allowed to select *Yes* or *No* in response to each of the options. This question addressed Ely's conditions of *adequate resources* (models of ETPD), *knowledge and skills* (types of ETPD opportunities), and *commitment* (partnerships and consortiums).

The top four responses were: *partnering with college/university* (90.5%), *teachers train other teachers* (90.5%), *21st CCLC regional training* (85.7%), and *video, CD, or online tutorial* (85.7%). It was interesting to see that *partnering with college/university* was the response with the highest votes. In the summary analysis in Chapter V, I mention that directors in sites without 21st CCLC needed information on partnerships in their areas. This survey result supports that research assertion, since many of the survey *directors in sites without 21st CCLC* indicated an interest in partnering with colleges and universities. The responses to this survey item yielded an interesting result. For each one of the survey item

options, more than 2/3rds of the *directors in sites without 21st CCLC ETPD* selected the option as being desirable. Therefore, it would be beneficial to provide the *directors in sites without 21st CCLC ETPD* with information on all of these ETPD models.

In the Without 21st CCLC ETPD Section, Question 2 asked: *Which types of ETPD software/programs would benefit your 21st CCLC site? (Select all that apply.)* This question asked *directors in sites without 21st CCLC ETPD* to identify desirable software ETPD (Table H15). The purpose of this question was to learn about the types of software ETPD that could benefit sites without 21st CCLC ETPD. Survey respondents were allowed to select *Yes* or *No* in response to each of the options. This question addressed Ely's condition of *adequate resources* (types of software/programs).

The top three responses were *math programs* (100.0%), *English/reading programs* (95.2%), and *science programs* (90.5%). These responses also reflected the 21st CCLC focus on these academic topics, as seen in the qualitative data. For each one of the survey item options, more than half of the *directors in sites without 21st CCLC ETPD* selected the software/programs option as being desirable. Therefore, it would be beneficial to provide the directors in sites without 21st CCLC ETPD with information on all of these software/program ETPD topics.

In the Without 21st CCLC ETPD Section, Question 3 asked: *Which types of resource ETPD would benefit your 21st CCLC site? (Select all that apply.)* This question asked *directors in sites without 21st CCLC ETPD* to identify desirable resource ETPD (Table H16). The purpose of this question was to learn about the types of resource ETPD that could benefit

sites without 21st CCLC ETPD. Survey respondents were allowed to select *Yes* or *No* in response to each of the options. This question addressed Ely's condition of *adequate resources* (types of ETPD on resources).

The top three responses were *Smartboards and/or Promethean Boards* (95.2%), *digital camera/camcorder* (90.5%), and *wireless networks* (85.7%). *Smartboards/Promethean boards* was highly cited as a desirable topic for resource ETPD in the director interviews, for *directors in sites without 21st CCLC ETPD.* Therefore, this result also supports the findings of the qualitative data.

In the Without 21st CCLC ETPD Section, Question 4 asked: *The following is a list of ETPD characteristics. Which ones would benefit 21st CCLC ETPD?* This question asked *directors in sites without 21st CCLC ETPD* to identify desirable ETPD characteristics (Table H17). Survey respondents were allowed to select *Yes* or *No* in response to each of the options. This question addressed Ely's conditions of *adequate time* (availability of ETPD), *knowledge and skills* (ETPD relevance to subject area and student learning), and *participation* (teacher input and collaborations).

The top three responses were: *EPTD was related to subject area content* (100.0%), *EPTD was appropriate to teachers' varying levels of knowledge* (95.2%), and *EPTD was focused on how technology can improve student learning* (95.2%). Therefore, for *directors in sites without 21st CCLC ETPD*, ETPD that would assist with academic subject matter (and thus student learning) was deemed to be important. These findings supported the conclusions of the qualitative data.

Program Views Section of Survey: Program View Questions Asked of All Respondents

In the Program Views Section, Question 1 asked: *Does your 21st CCLC program have a technology plan that discusses ETPD?* This question asked all director survey respondents to identify if they had a technology plan that discussed ETPD (Table H18). The purpose of this question was to learn about the prevalence of technology plans in the 21st CCLC sites. Survey respondents were allowed to select one response for this question, either *Yes* or *No*. This question addressed Ely's condition of *leadership* (strategic technology and ETPD implementation plan). Just over 1/4th (25.5%) had a technology plan that discussed ETPD. This was a surprising result, given that none of the interview directors mentioned having a technology plan that discusses ETPD. I was surprised to see that just over 1/4th of the survey directors did have a technology plan that discussed ETPD. I thought that the percentage would be lower. However, most of the survey item respondents (61.7%) did not have a technology plan that discusses EPTD. Therefore, this need should be addressed.

In the Program Views Section, Question 2 asked: *What kinds of support would help your site with ETPD? (Select all that apply.)* This question asked all director survey respondents to identify the kinds of support that would help with ETPD (Table H19). The purpose of this question was to learn about ETPD support that was valuable to survey directors. Survey respondents were told to *select all that apply*, so they could choose one option or multiple options for this question. This question addressed Ely's conditions of *adequate resources* (formats of ETPD), *knowledge and skills* (learning about programs specific to 21st CCLC), and *commitment* (sources of LEA and NCDPI support).

The top three responses were: *list of programs/software/websites specific to 21st CCLC* (83.0%), *21st CCLC website with information* (68.1%), and *online modules to deliver EPTD* (59.6%). These types of ETPD support were definitely emphasized in the qualitative interviews. The lowest response was *more support from administrators*, with only 25.5% selecting this option as needed ETPD support. This possibly indicated that around three-fourths of respondents feel they receive adequate administrator support. This was a surprising result, given that a majority of the directors in the qualitative study discussed the need for additional administrator support in various areas.

In the Program Views Section, Question 3 asked: *What kinds of ETPD are needed for your 21st CCLC site(s)?* This question asked all director survey respondents to rank some ETPD needs in terms of *no level of need*, *low level of need*, *medium level of need*, and *high level of need* (Table H20). The purpose of this question was to learn about the directors' views on the levels of ETPD needs. Survey respondents were allowed to select one of four response levels for each ETPD needs option, in this question. This question addressed Ely's condition of *knowledge and skills* (student safety, programs relevant to afterschool, topics that facilitate ETPD).

The top three responses with high levels of need were: *programs specific to afterschool* (55.3%), *teaching with real world applications of technology* (44.7%), and *safety, filters, and Internet blocks to protect students* (34.0%). These results were supported by the qualitative interview data. The interview directors especially emphasized the need for information on programs that are specific to afterschool.

In the Program Views Section, Question 4 asked: *Which of the following are barriers to 21st CCLC ETPD? (Select all that apply.)* This question asked all director survey respondents to identify barriers to ETPD (Table H21). The purpose of this question was to learn about the survey directors' views on barriers that interfered with offering 21st CCLC ETPD. Survey respondents were told to *select all that apply*, so they could choose one option or multiple options for this question. This question fit Ely's conditions of *adequate time* (time for ETPD) and adequate resources (obstacles that inhibit ETPD).

The top three responses were: *funding issues* (57.4%), *little time for preparing new activities* (51.1%), and *inadequate hardware/software to make training worthwhile* (42.6%). All three of these top responses are strongly supported by the qualitative data. The interview directors also identified these as major barriers to 21st CCLC ETPD. Therefore, it would be beneficial to address methods of eliminating these barriers to 21st CCLC ETPD.

In the Program Views Section, Question 5 asked: *Which incentives could possibly promote ETPD in 21st CCLC? (Select all that apply.)* This question asked all director survey respondents to identify ETPD incentives (Table H22). The purpose of this question was to learn about the directors' views on incentives that could possibly promote 21st CCLC ETPD with staff members. Survey respondents were told to select all that apply, so they could choose one option or multiple options for this question. This question addressed Ely's conditions of *adequate resources* (resources to help ETPD) and *rewards and incentives* (rewards and incentives to promote ETPD).

The top three responses were: *additional resources for the classroom, e.g. hardware, software* (66.0%), *credits toward recertification, CEUs* (57.4%), and *pay for attending ETPD* (55.3%). These findings supported the qualitative data. These were the main reward and

incentive themes that the qualitative interview directors noted. Therefore, it would be beneficial to explore ways to offer these ETPD rewards and incentives to 21st CCLC staff.

In the Program Views Section, Question 6 asked the survey directors to: *Please share any additional comments regarding the use of ETPD in your site(s) or about this survey.* For this question, directors were asked to write any additional comments into a response box. Directors had unlimited space in which to provide their responses. This question was designed to provide the directors with the option to provide their views on the survey or about 21st CCLC ETPD. This question was also designed to potentially address Ely's condition of *dissatisfaction with the status quo* (directors can provide their feelings on ETPD).

Only one director listed a response in the section for responses. This was the response: *Our center has access to the computer lab on a daily basis. The children are exposed to technology at school. We have access to all the technology programs that the school uses during the day.* Therefore, none of the directors entered a response that directly addressed the survey or their opinions on 21st CCLC ETPD.

Crosstabulations and Comparisons of Selected Factors

Crosstabulations and comparisons of selected survey items are listed in Appendix I. These crosstabulations and comparisons provide additional insight into the relationships between the survey results. They also provide additional information on the characteristics of the survey respondents.

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

The purpose of this study was to learn about the current state and needs of ETPD in North Carolina 21st CCLC afterschool programs. The following research questions guided this study:

1. What are thirteen 21st CCLC directors' views on the current state and needs of ETPD implementation in their sites?
    a. How can these views inform the creation of a statewide 21st CCLC ETPD survey for all North Carolina 21st CCLC directors?
2. According to North Carolina 21st CCLC directors, what is the current state (and needs) of ETPD implementation in 21st CCLC sites (as determined by a statewide survey that was informed by the results of the 13 qualitative director interviews)?

A mixed methods approach was used to collect the data. The research began with qualitative exploratory interviews. Through qualitative exploratory interviews, thirteen 21st CCLC directors provided information on ETPD implementation. The interview information was used to refine a 21st CCLC ETPD survey. The results from the qualitative exploratory interviews, cognitive interviewing, and additional literature review assisted in developing the quantitative survey instrument. Therefore, the mixed methods approach was helpful in terms

of maximizing the appropriateness and utility of the 21st CCLC ETPD survey instrument. This survey was sent to all 2009-2010 NC 21st CCLC directors.

Summary and Discussion of Results

This section contains the summary of the study results, along with the implications of the results. The summary and implications are organized according to Ely's eight conditions for innovation implementation. Ely's guidelines provide a theoretical framework for examining 21st CCLC ETPD conditions: (1) dissatisfaction with the status quo, (2) adequate time, (3) adequate resources, (4) knowledge and skills, (5) rewards or incentives, (6) participation, (7) commitment, and (8) leadership (Ely, 1990, 1999; Surry & Ensminger,2003). The implications sections contain specific research literature linkages. These implications sections also provide practical 21st CCLC ETPD suggestions that are directly based on the study results. In this summary, the quantitative and qualitative data are presented and evaluated together (*data integration*) (Onwuegbuzie & Teddlie, 2003).

Dissatisfaction with the Status Quo

Qualitative results. The 13 interview directors did not express dissatisfaction with the status quo in terms of the need for educational technology and ETPD. All 13 site directors had overall positive feelings about the need for education technology and ETPD. Student engagement, educational equity, and teacher readiness were cited as major impetuses for promoting educational technology and ETPD. Four *directors in sites without 21st CCLC ETPD* expressed concerns about negative teacher attitudes on ETPD, especially if teachers

were satisfied with standard non-technological instruction. All 13 of the directors noted that there should be a balance between ETPD usage, physical activity, the arts, and character education.

Quantitative results. There was an open-ended question in the survey that asked directors to provide their views on ETPD on the survey. This question provided directors with the opportunity to give their positive or negative ETPD views. None of the survey respondents directly expressed dissatisfaction with the ETPD status quo.

Implications. Ely's condition of *dissatisfaction with the status quo* is a condition that relates to Rogers' *relative advantage* condition (Rogers, 1995). Potential innovation users must believe in the relative advantage of the innovation. Any new innovation or approach has to be viewed as necessary. The directors in this study saw the need for ETPD in their sites, especially in view of their students' needs. This positive director view boded well for any future NCDPI or LEA initiatives to promote educational technology and ETPD.

Adequate Time

Qualitative results. Adequate time for ETPD was a major issue for 21st CCLC directors. All 13 of the directors discussed the need for additional training time. The directors stated that it was important to find times when directors, site coordinators, and teachers could attend trainings together. All of the directors discussed the lack of training time, due to busy work duties. Five *directors in sites without* 21st *CCLC ETPD* discussed how separate, multiple 21st CCLC site locations adversely affected ETPD scheduling. All eight of the *directors in sites with 21st CCLC ETPD* and four of the *directors in sites without 21st CCLC ETPD* claimed that regional, local, and site-based trainings offered by NCDPI would be potential time-saving solutions. The eight *directors in sites with 21st CCLC ETPD*

programmed 21st CCLC EPTD training into their regular school year calendars; this approach helped with scheduling. Four of the *directors in sites with* 21st *CCLC ETPD* and two of the *directors in sites without 21st CCLC ETPD* cited the lack of LEA support with ETPD scheduling as a major hindrance. Seven *directors in sites with 21st CCLC ETPD* and all five of the *directors in sites without 21st CCLC ETPD* cited teacher fatigue as a major detrimental issue. Three *directors in sites with 21st CCLC ETPD* addressed teacher fatigue by using non-school day volunteers and selecting afterschool staff based on applications.

Quantitative results. According to the survey results, inadequate time was a barrier to 21st CCLC ETPD. For all of the survey respondents, the second greatest ETPD obstacle was *little time for preparing activities* (51.1%). Other time-related items of concern were *teacher fatigue and workload* (40.4%), and *too many other time commitments* (36.2%). This supported the findings of the qualitative study.

Implications. Adequate time is cited in the literature as being vital to innovation implementation (Ebersole & Vordan, 2003; Pajo & Wallace, 2001). The directors in this study identified several variables that interfered with the time for ETPD implementation. Therefore, the inadequate time obstacle needs to be addressed by 21st CCLC officials.

It would be beneficial for NCDPI to offer localized ETPD training to 21st CCLC sites. If traveling presented financial and logistical challenges, this personalized training could be conducted using online modules or videoconferencing. These approaches would also help with the time factor, because directors could access the online training at times that were most convenient for their sites. Videoconferencing could take place at times that were best for the individual directors and their sites.

Several *directors in sites with 21st CCLC ETPD* identified the summer time as the best time for training schedules, including ETPD. All 21st CCLC directors need to heed this suggestion. With each year's budget, directors need to plan for summer ETPD scheduling. This option would require careful director pre-planning with the yearly budget, in order to address summer budgetary and logistical training needs.

Directors may want to examine their options for hiring volunteers and non-school day individuals to assist with educational technology and ETPD. For example, one site had great success with a part-time curriculum assistant. This solution would assist with the problems of teacher fatigue and inadequate planning time. NCDPI would have to provide clear guidelines on hiring additional non-school day individuals. These guidelines would include information on the maximum number of weekly hours and background checks for non-school day individuals.

Since finding adequate time for ETPD is so difficult, directors may benefit from scheduling occasional in-service ETPD workdays. These in-service workdays would provide a substantial block of time for ETPD. According to the qualitative study directors, workshops were the most common form of formal professional development activity. With in-service workdays, directors would have more time to schedule workshops in conjunction with additional practice time. Additional practice time could promote greater staff educational technology implementation.

Adequate Resources

Qualitative results. Adequate resources also proved to be an important ETPD condition for the 21st CCLC directors. All 13 directors expressed a desire for more educational technology and ETPD funding. They stated that additional funding would help

with paying for educational technology and ETPD. Also, additional funding and compensation were cited as ways to motivate teachers to participate in ETPD. However, all of the directors stated that reading/math books and standard materials were emphasized over educational technology and ETPD. Books and standard materials focused on North Carolina testing requirements and curriculum standards. The directors cited many different types of ETPD, including basic computer game usage and complex GPS research projects. However, for all 13 directors, educational technology and ETPD mainly focused on academic test preparation programs and educational websites. Computer usage was cited as the main focus for educational technology usage. Smartboards/Promethean Boards were cited as desirable educational technology tools by the *directors in sites without 21st CCLC ETPD.* Smartboards/Promethean Boards were also cited for frequent use by *directors in sites with 21st CCLC ETPD.* For the five *directors in sites with 21st CCLC ETPD* in LEA-based 21st CCLC sites, LEAs provided additional resources, curriculum input, and ETPD scheduling.

Quantitative results. Forty-four (44) out of 47 (93.6%) survey respondents listed that they used one or more educational technology programs. However, only 53.2% of the 47 survey respondents noted offering 21st CCLC ETPD. For *directors in sites with 21st CCLC ETPD,* the top three ranking ETPD software types used all revolved around *test preparation* (88.0%), *English/reading* (88.0%) and *math* (84.0%). Similar results were found for *directors in sites without 21st CCLC ETPD.* Their top three wishes for ETPD software were programs focused on *math* (100.0%), *English/reading* (95.2%), and *science* (90.5%). These results were supported by the qualitative data.

The main responses for types of educational technology programs involved *Study Island* (34.1%), *computers* (22.7%), *Smartboards/Promethean Boards* (9.1%), *Classcapes* (9.1%), and *Read 180* (9.1%). For *directors in sites with 21st CCLC ETPD*, *Smartboards/Promethean boards* (60.0%), *digital cameras/camcorders* (52.0%), and *wireless networks* (48.0%) were the main subjects of resource ETPD. *Directors in sites without 21st CCLC ETPD* cited these same three resources as the main resource ETPD needs. These conclusions supported the findings of the qualitative data.

Overall, 41 of the 47 directors listed one or more methods of how their program uses education technology. *Interactive learning* (14.6%) and *promotes reading and math help* (12.2%) were the only two responses exceeding 10%. This conclusion supported the findings of the qualitative data.

The survey respondents identified *funding issues* (57.4%) as the main barrier to 21st CCLC ETPD. For the survey respondents, *additional resources for the classroom, e.g. hardware/software* (66.0%) was cited as the main incentive that could promote 21st CCLC ETPD.

Implications. Burkman (1987) states the importance of developing the necessary materials, equipment, and infrastructure to support innovation implementation. It would be helpful for NCDPI to provide additional funding specifically for educational technology and ETPD, along with specific budget and spending guidelines. This would help 21st CCLC sites to develop their own specialized afterschool ETPD.

Additional funding would be especially helpful for non-LEA sites. These sites often have great infrastructural needs for educational technology and ETPD; however, they do not have access to LEA resources that are already paid for by the LEAs. Non-LEA sites were

less likely to have access to full-time technology support staff. This meant that non-LEA sites were less likely to have access to personnel with expertise in technology installation and network maintenance. These limitations adversely affect the amount of ETPD that is offered. Additional funding could help with these limitations.

These study data showed that educational technology use and ETPD focused on academic test preparation during tutoring. The directors in this study focused their ETPD on improving their student academic achievement goals. These goals involved raising test scores and increasing student skills. However, 21st CCLC site directors also expressed interest in additional recreational ETPD topics, such as music creation software and digital camera activities. This is an area of need that should be addressed by NCDPI, LEAs, and directors.

Knowledge and Skills

Qualitative results. According to all 13 directors, NCDPI and LEAs needed to provide information on evaluating vendor educational technology and ETPD offers. All of the directors felt that NCDPI and LEAs needed to provide ETPD on technology integration into the afterschool academic subjects. Eight *directors in sites with 21st CCLC ETPD* actively sought training opportunities. Seven *directors in sites with 21st CCLC ETPD* hired outside consultants to help with ETPD needs. All eight of the *directors in sites with 21st CCLC ETPD* also sought to customize ETPD to afterschool, focusing on technology activities that promote student engagement. Four of the *directors in sites without 21st CCLC ETPD* cited concerns about student safety and ethical use with technology; these concerns negatively affected ETPD.

Quantitative results. For *directors in sites with 21st CCLC ETPD,* the top three responses for ETPD models were attending *21st CCLC regional training* (80.0%), *director training of afterschool teachers* (76.0%), and *workshops/conferences* (76.0%). *21st CCLC regional training* was ranked highly in the top potentially helpful models among *directors in sites without 21st CCLC ETPD* (85.7%).

Directors were asked to identify beneficial ETPD characteristics. Of *directors in sites with 21st CCLC ETPD,* the top three answers were *ETPD was related to subject area content* (88.0%), *ETPD was appropriate to teachers' varying levels of knowledge* (76.0%), and *ETPD was focused on how technology can improve student learning* (76.0%). *Directors in sites without 21st CCLC ETPD* identified that ETPD was valuable if *ETPD was related to subject area content* (100%), *ETPD was appropriate for teachers' varying knowledge* (95.2%) and *ETPD was focused on how technology can improve student learning* (95.2%.) Therefore both groups highly rated the importance of ETPD that was related to the subject area content, appropriate to teachers' knowledge, and focused on how technology can improve student learning. These three common responses were consistent with the qualitative study.

Directors were asked to select whether certain ETPD needs had *no level of need,* a *low level of need,* a *medium level of need,* and a *high level of need*. The top three responses with high levels of need were: *programs specific to afterschool* (55.3%), *teaching with real world applications of technology* (44.7%), and *safety, filters, and Internet blocks to protect students* (34.0%). This was consistent with the findings of the qualitative data.

Implications. Knowledge and skills are essential to successful implementation (Ebersole & Vordan, 2003; Herson, Sasabowski, Lloyd, Flowers, Paine, & Newton, 2000; Pajo & Wallace, 2001). Implementation requires training and skill development (Rogers, 1995). The directors identified 21st CCLC regional trainings as a major conduit of educational technology and ETPD information. 21st CCLC sites would benefit from a comprehensive schedule of statewide and regional ETPD options, throughout the school year. This is a knowledge need that NCDPI and LEAs could address, for the NC 21st CCLC sites in different geographical regions.

In terms of knowledge and skills, directors expressed an interest in ETPD information that was specifically geared to 21st CCLC afterschool. In both the qualitative and quantitative portions of the study, directors cited a *list of programs/software/websites specific to 21st CCLC* as an important need. This information would help directors with customizing ETPD to afterschool.

In the qualitative study, the directors focused on formal professional development opportunities. One director discussed using staff members to conduct ETPD; however, the staff members offered ETPD that was structured in a formal workshop format. 21st CCLC ETPD could benefit from incorporating informal professional development to share knowledge and skills. With this approach, directors would integrate staff development as a part of everyday practice, using modeling, mentors, or informal coaching. Staff members could observe high-quality staff in action and collaborate to implement activities. The 21st CCLC ETPD may be enhanced with informal professional development opportunities.

Rewards and Incentives

Qualitative results. All 13 of the directors agreed with the use of rewards and incentives. They felt that teachers would be motivated to attend ETPD if they had access to extra technology equipment (two directors) and/or extra pay (ten directors). One *director in a site with 21st CCLC ETPD* noted that CEU credits served as an excellent teacher motivator in his/her program. One director stated that feeding staff during training times would also help with ETPD motivation.

Quantitative results. The top three responses for survey respondents were *additional resources for the classroom, e.g. hardware, software* (66.0%), *credits toward recertification*, CEUs (57.4%), and *pay for attending ETPD* (55.3%). This supported the conclusions of the qualitative study.

Implications. Rewards and incentives play a large role in promoting innovation implementation (Rogers, 1995). Burkman (1987) discusses the use of rewards as part of "moral support" during implementation (p. 450). Rewards and incentives would play a large role in promoting 21st CCLC ETPD. Directors also need to make a special effort to offer ETPD incentives to staff members. All 21st CCLC directors need to communicate with their staff members in order to ascertain the most effective rewards and incentives for their sites.

These findings supported the assertions of Adelman, Donnelly, Dove, Tiffany-Morales, Wayne, and Zucker (2002), who discussed the importance of rewards and incentives in ETPD. These authors stated that state or district technology requirements are not major motivators for ETPD participation. They said that incentives that are associated

with increased teacher participation are: class release time, scheduled contract time, credits for recertification, and additional hardware and software resources. These same incentives were important to the 21st CCLC interview directors and survey directors.

Participation

Qualitative results. All five of the *directors in sites without 21st CCLC ETPD* had trouble with soliciting staff participation, mainly due to limited time for participation. All eight of the *directors in sites with 21st CCLC ETPD* emphasized a climate of participation. Site coordinators and teachers often gave program and training input to these directors. One *director in a site with 21st CCLC ETPD* even encouraged his/her site coordinator and teachers to conduct trainings (including ETPD).

Quantitative results. Sixty percent (60.0%) of *directors in sites with 21st CCLC ETPD* planned ETPD with teacher input. Ninety percent (90.5%) of *directors in sites without 21st CCLC ETPD* directors stated it would be beneficial for ETPD to be planned or delivered with teacher input.

Forty-four percent (44.0%) of *directors in sites with 21st CCLC ETPD* indicated that EPTD training was designed with collaborative practice sessions. Almost eighty-six percent (85.7%) of *directors in sites without 21st CCLC ETPD* believed that ETPD training should include collaborative practice sessions. These percentages indicated an interest in collaboration and participation for ETPD.

Implications. Participation by intended users is important to fostering implementation (Rogers, 1995; Smith & Mourier, 1999). Fullan (2001) noted the importance of participation, saying that it fosters the "capacity to seek, critically assess, and selectively

incorporate new ideas and practices" (p. 44). In this study, participation was an important factor for promoting ETPD. *Directors in sites with 21st CCLC ETPD* did not rely on top-down mandates or imposed ETPD standards for staff members. ETPD participation was fostered by dialogue and a democratic approach to selecting curricula. If directors seek staff member input, the ETPD is more likely to fit the context and needs of the program. *Directors in sites without 21st CCLC ETPD* need to promote participation. This can be done with informal staff discussion sessions. Directors with program websites can also establish a private online discussion blog for staff members. This would provide a means for staff communication and participation.

Commitment

Qualitative results. All 13 of the study directors claimed that it was important for 21st CCLC leaders (NCDPI, LEAS, directors) to discuss ETPD. The directors expressed a desire for a frequently updated NC 21st CCLC website or online discussion forum. Five *directors in sites with 21st CCLC ETPD* and four *directors in sites without 21st CCLC ETPD* wished for more LEA financial support, especially directors with sustainability concerns. Two *directors in sites without 21st CCLC ETPD* also noted that some LEAS would not allow full resource access. This inhibited ETPD in their sites.

Quantitative results. For survey respondents, the top three needs for ETPD support were a *list of program/software/websites specific to 21st CCLC* (83.0%), *21st CCLC website with information* (68.1%) and *online modules to deliver ETPD* (59.6%). These are ETPD support items that can be provided by NCDPI and LEAs, for the 21st CCLC directors.

One survey question asked about kinds of support that are needed for ETPD. The lowest response was for *more support from administrators* (25.5%). This may indicate that around three-fourths of respondents felt that they had adequate administrator support. This differed from some of the qualitative survey findings, in which directors indicated a need for more administrator support.

Implications. Commitment and support from higher level supervisors are essential to innovation implementation (Ebersole & Vordan, 2003; Jost & Scherberger, 1994). This conclusion was supported by the study results. In this study, the directors clearly stated the importance of NCDPI and LEA support in providing 21st CCLC ETPD.

According to Trowler (2002) policies are rarely implemented in the same form as originally intended. The USDOE and NCDPI have expressed support for educational technology and professional development, components of ETPD (USDOE, 2003; Public Schools of North Carolina, n.d.). However, many of the NC 21st CCLC interview directors expressed concern over "what they were supposed to be doing" with ETPD. Although ETPD is viewed as important, it is implemented in different ways in different sites. Therefore, more communication is needed in order to provide directors with ETPD information. According to the study directors, a frequently updated statewide 21st CCLC website (with a discussion forum) is needed, for commitment and support. These would contribute to statewide collaboration and enhanced sharing of ETPD knowledge.

Leadership

Qualitative results. All 13 of the directors showed leadership by conducting all staff trainings, including ETPD trainings. The *directors in sites with 21st CCLC ETPD* also showed leadership by partnering with universities, consortiums, and/or community groups to

offer ETPD. None of the qualitative study directors discussed ETPD implementation plans. However, many of the directors included supportive statements on educational technology and ETPD on program websites, brochures, and informational handouts.

Quantitative results. Seventy-six percent (76.0 %) of *directors in sites with 21st CCLC ETPD* used *director training of afterschool teachers*. Of *directors in sites without 21st CCLC ETPD*, 71.4% claimed that *director training of afterschool teachers* would be beneficial. Many of the qualitative study directors also cited this ETPD model.

For *directors in sites without 21st CCLC ETPD*, the top desired ETPD model was *partnering with college/university* (90.5%). Only 25.5% of survey respondents had a technology plan that discussed ETPD for their site(s).

Implications. For *directors in sites with 21st CCLC ETPD*, partnerships and consortiums helped directors with their leadership role, by providing orderly and well-planned ETPD resources and trainings (for both students and teachers). These resources provided additional help with offering ETPD. *Directors in sites without 21st CCLC ETPD* need to be informed about the partnerships and consortiums that are available in their regions. NCDPI, LEAs, and other directors can contribute this information.

21st CCLC directors need to ensure that their programs have clear educational technology and ETPD implementation plans. Technology implementation plans are essential tools. Technology implementation plans can help with planning and identifying ETPD implementation needs in the sites. Implementation plans also convey clear educational technology and ETPD expectations to staff members.

Practice Implications

This study has practical applications, in addition to academic research applications. As shown in the summary section, this study provides specific recommendations on 21st CCLC ETPD for 21st CCLC officials (NCDPI, LEAs, other directors). Ely's eight conditions of innovation implementation support the 21st CCLC ETPD research themes that emerged. As a result, Ely's conditions provide an organized framework for examining the necessary 21st CCLC ETPD conditions. Therefore, NCDPI can use the information to provide specific 21st CCLC ETPD guidelines. NCDPI can conduct targeted workshops that specifically address this topic. Also, NCDPI can disseminate information that encourages directors to examine Ely's eight conditions before implementing 21st CCLC ETPD. LEAs can use the study information to understand their role in promoting 21st CCLC ETPD. For example, LEAs are essential for providing educational technology resources, assisting with ETPD scheduling, and providing overall program sustainability support. With a greater understanding of their roles, LEAs can provide continued or enhanced support of 21st CCLC ETPD. 21st CCLC directors can use the study data to inform their program's ETPD opportunities. A director can look at Ely's conditions and evaluate his/her own 21st CCLC ETPD programs. Directors can use the study information and Ely's conditions to analyze their program's 21st CCLC ETPD strengths and weaknesses. The director might find that the program is doing well in terms of having adequate resources. However, participation from the staff might need to be improved. The director may decide to focus on improving participation, by increasing staff-led ETPD and soliciting direct staff ETPD input.

Linkages to the Research Literature

This study supports the literature on professional development. Based on the results of this study, 21st CCLC ETPD should follow certain established professional development principles. It is important for professional development to relate to academic subject area content and program goals, instead of focusing on the mechanics of educational technology programs (Darling-Hammond, 1997, 1999; Darling-Hammond & McLaughlin, 1995; National Staff Development Council, 2001). For example, this study discussed how ETPD should relate to the academic enrichment focus of 21st CCLC. The ETPD should not just teach staff members the mechanics of using a particular educational technology resource or program. The ETPD should relate to the ETPD program needs that are identified by 21st CCLC staff members, who are working to improve student testing, learning, and enrichment outcomes. ETPD should be specific to 21st CCLC afterschool realities within each program, not with a "one size fits all" approach. This specific approach was supported in this study's discussions of Ely's conditions.

The study results extended the literature on how participation assists with professional development. Professional development benefits from a climate of participation, with discussion and reflection (Dadds, 2001; Darling-Hammond & McLaughlin, 1995; King & Newmann, 2000; Lieberman, 1994; McLaughlin & Zarrow, 2001; Villega-Reimers, 2003). In this study, it became clear that participation is essential for 21st CCLC ETPD. The study directors discussed the importance of NCPDI, LEA, and staff participation, in many of Ely's conditions. Participation was vital for staff involvement and "buy-in" for ETPD. Directors also expressed a desire for LEA participation and NCDPI participation with their 21st CCLC ETPD offerings, scheduling, and availability.

The study results extend the literature in two additional areas: partnerships in overall professional development and partnerships in afterschool professional development. Professional associations and partnerships can be vital tools in providing professional development (Becker & Riel, 2000; Joyce & Showers, 2002). The research literature emphasizes that partnerships, especially with community associations, businesses, and universities, can also provide enhanced services and professional development to afterschool programs (Hall & Gruber, 2007; Reisner, Vandell, Pechman, Pierce, Brown, & Bolt, 2007). Raley, et al. (2005) discussed specific practices that help afterschool professional development. For example, they mentioned the importance of having afterschool programs partner with larger organizations such as schools and other agencies. These agencies can help by including afterschool staff in professional development sessions. These partnerships reduce professional development costs and promote availability. This study specifically emphasized the importance of professional associations and partnerships in providing 21st CCLC ETPD. The directors who mentioned these resources had more success in their 21st CCLC ETPD efforts. In the study, professional associations and partnerships contributed to 21st CCLC ETPD success for *directors in sites with 21st CCLC ETPD* for several of Ely's conditions, especially in terms of providing resources and trainings.

This dissertation study also supports the limited amount of literature related to afterschool ETPD. It is established in the literature that afterschool programs with well-organized instruction can promote student engagement and improved academic outcomes (Birmingham, et al., 2005; Black, Doolittle, Zhu, Unterman, & Grossman, 2008; Gerstenblith, Soule, Gottfredson, Lu, Kellstrom, & Womer, et al., 2005; Granger, 2008; Lauer et al., 2006). However, afterschool staff members need professional development and

support in order to implement well-organized instruction (Black, Doolittle, Zhu, Unterman & Grossman, 2008; Hall & Gruber, 2007; Little, Wimer, & Weiss, 2008). This 21st CCLC study reinforces the research literature which states that afterschool ETPD is key to promoting effective and well organized-educational technology instructional support in afterschool (Halpern, Spielberger, & Robb, 2001; Moses, 2008; Raley, et al., 2005; United States Department of Health and Human Services, 2007, pp. 5-6). Afterschool ETPD helps to promote usage of educational technology in afterschool settings, and it helps staff members to integrate educational technology in a manner that will help with student enrichment goals. This study is a specific contribution to the afterschool ETPD research literature. This study provides guidance on conditions that facilitate afterschool ETPD. This study provides information on implementation factors in afterschool ETPD. Implementation involves the actual use of instructional strategies or equipment. However, the purpose of implementation is to facilitate appropriate or specific usage. This study, by using Ely's conditions, provides a framework by which 21st CCLC officials can evaluate the actual implementation of 21st CCLC ETPD in their programs.

Study Observations

I had a good experience with conducting this study. I enjoyed studying this topic because I had a strong interest in it. My interest level made a difference during the tedious steps in the research. Conducting a mixed methods study made me feel as if I was conducting a double dissertation, since both of the qualitative and quantitative methodologies for this study contained many research steps. However, I saw the value in using both approaches to study this one topic. The qualitative interviews really did customize the survey to 21st CCLC ETPD, more so than if I would have used my own director knowledge

to develop a survey. It was interesting to see how the quantitative survey results confirmed many of the qualitative findings. This made me realize that many of the 21st CCLC directors are dealing with similar ETPD challenges, regardless of their diverse characteristics.

I enjoyed the qualitative interviews the most, because I enjoyed traveling and meeting the directors. The interview directors seemed to be very hard-working people, who really believed in the program. During many of the interviews, the directors discussed the importance of afterschool programming. This was an additional theme that emerged with all of the 13 interview directors. They talked about how some of their students would be in unsupervised situations at home if they were not in the afterschool setting. Some of the directors talked about students who were finally doing well in school, because the students were receiving individualized attention and small group instruction. Most of the *directors in sites with 21st CCLC ETPD* were proud of their site's emphasis on educational technology. These directors felt that their heavy emphasis on educational technology was helping students who would otherwise have no educational technology exposure, at home or at school. Several of the directors told me some student academic success stories. One director who worked in a very low income urban area frequently referred to the students as her own "children." These discussions reminded me of how much I enjoyed my directorship, especially the interactions with grateful students.

My knowledge of the 21st CCLC ETPD context helped with using Ely's conditions. Once I read Ely's literature, I saw how Ely's eight conditions were relevant in terms of evaluating 21st CCLC ETPD. Ely's conditions are very broad, which facilitates their applicability to many different contexts. Therefore, it was easy to link the interview and survey themes to Ely's conditions. This helped me with the writing and analysis. I did not

have to struggle to link the research themes to Ely's conditions. Also, I think that the *interview guide* approach played a large role in the ease of linking the information to Ely's conditions. With the *interview guide* approach, I had a specific list of questions to ask the directors. Although the *interview guide* approach helped me to cover a lot of information, this approach may have interfered with the free expression of the directors. We mainly adhered to the topic during the interviews, using the *interview guide* questions. This could be another reason that explains why the qualitative study information fit so well with Ely's conditions.

I did not expect to see how the directors emphasized Ely's *rewards and incentives* condition. They were emphatic about how the use of rewards and incentives is important to promoting 21st CCLC ETPD. When I was a director, I did not focus on this condition. As a director, I relied on program requirements and mandated training schedules to enforce ETPD attendance. However, in retrospect, I wish that I would have known how important rewards and incentives can be for staff. I am sure that it would have helped with staff participation and "buy-in" for 21st CCLC ETPD.

If I had the chance to change the study process, I would have changed the time of year in which I conducted the study. My data gathering and survey administration took place from December 2009 to June 2010. This was the busiest time of the year for many of the directors. It would have been beneficial to conduct this study in the summer, when the directors were not as busy with directorial tasks, program administration, staff demands, and student demands. Since many of the directors were often too busy to schedule long amounts

of interview time, I often scheduled additional trips for interviews and additional follow-up interviews. This extra traveling was expensive and time consuming, even though it was necessary for the study.

Limitations of the Study

This study was limited to the 2009-2010 North Carolina 21st CCLC directors. Since 13 directors were interviewed, the qualitative information may not be representative of all 21st CCLC directors. The interview information was reliant on the participants' self-disclosure and honesty. However, the directors may have been guarded with their responses.

For the qualitative study, I solicited director recommendations from NCDPI officials. I also recruited additional participants via email. Because of these selection procedures, I benefited from a variety of perspectives, from diverse directors. However, this study set of directors may not have had the same viewpoints and perspectives of other 21st CCLC directors who did not participate. Therefore, the qualitative results may not have captured the entire scope of 21st CCLC ETPD implementation.

The qualitative research interviews did not include charter school site directors or church site directors. There were limited numbers of these directors in the 2009-2010 cohort. I was not able to recruit any participants from these groups for the interviews.

The descriptive survey was only designed to provide preliminary descriptive information in an under-researched subject. The survey design did not yield predictive, causational, or correlational data. The survey information only provided basic numerical information on NC 21st CCLC directors' ETPD views. The derived survey data cannot show influences in other 21st CCLC areas, such as direct student impact.

Surveys have limitations, due to privacy concerns. Therefore, this may have influenced director survey responses about 21st CCLC ETPD. NCDPI officials asked 21st CCLC cohort directors to help with this study, and to complete the survey. Although this approach may have promoted the project, it also may have contributed to privacy concerns. The participants in this research may have viewed me as an authority for NCDPI. Participating directors may have feared being evaluated or judged.

There were additional study limitations related to the quantitative survey instrument. In developing the survey, I used the ETPD variables that were provided in the original CRITO and ISET surveys. I also included ETPD variables that emerged from the qualitative interviews, additional literature reviews, and the cognitive interviewing process. However, even with all of this preparation, there may have been additional ETPD variables that were not included in the 21st CCLC survey. I also had to consider the survey length. Due to the results of the cognitive interviews, I deleted several questions in order to shorten the final survey. Therefore, the survey was not as lengthy and comprehensive as originally planned. It was also difficult to measure the complexity of educational technology use and ETPD in this survey's descriptive statistical format. The survey only provided basic information on the current state and needs of 21st CCLC ETPD.

The survey may or may not have provided information that was applicable to all 21st CCLC directors and their sites. I used the email list that was provided by NCDPI. I sent the quantitative survey to all of the provided emails. Forty-seven (47) 2009-2010 school year directors responded, for a response rate of 52.2%. Therefore, these results may or may not be representative for sites with directors who did not respond to the survey.

As I noted in Chapter IV, NCDPI demographic information on the characteristics of all of the North Carolina 21st CCLC directors was not available. Therefore, I could not compare the characteristics of the interview or survey respondent directors to all of the 2009-2010 21st CCLC directors. This comparison would have been helpful, to judge the representativeness of the study participants.

The quantitative survey participants included limited numbers of charter and church sites. This affects the representativeness of the results. Rather than providing a conclusive picture of educational technology and ETPD in NC 21st CCLC, the survey questionnaire data provided a "snapshot."

Recommendations for Future Research

This research represents an introductory study in an under-explored topic. Therefore, there are various opportunities for follow-up studies. It would be beneficial to conduct in-depth case studies of sites with 21st CCLC ETPD and sites without 21st CCLC ETPD. This would yield additional information on the differences in educational technology use and ETPD in these contrasting types of sites. Detailed case studies could also focus on 21st CCLC ETPD in selected sites.

This study focuses on the 2009-2010 cohort; however, future studies could investigate ETPD usage in multiple cohort years. A multi-year case study could also focus on one 21st CCLC program, throughout the program's grant years. Several variables of interest also merit further inquiry: the impact of 21st CCLC program size on ETPD implementation, the effect of director attitudes on ETPD implementation, and the role of non-school day staff in 21st CCLC programs. This study was executed in the state of North Carolina. Future studies

could extend to other 21st CCLC grant states. Future studies could also include in-depth 21st CCLC program analyses for each one of Ely's conditions. Additional research could involve extensive studies of the university/consortium partnerships that are prevalent for sites with 21st CCLC ETPD.

Next Steps

The IRB renewal is approved for this study. Therefore, I would like to use this study's information for publications in research journals. I am also interested in more extensive publications, such as book chapters and books, for this research topic. I plan to conduct research presentations at academic conferences and informational presentations at NCDPI conferences.

In terms of additional research, I am especially interested in conducting additional qualitative studies on this topic. I would like to conduct additional case studies on the 21st CCLC afterschool sites that are offering regular ETPD. In the case studies, I would examine the specifics of Ely's eight conditions for 21st CCLC ETPD in greater detail. This 21st CCLC dissertation was a beginning study, and it yielded good information on the broad themes of 21st CCLC ETPD. However, I believe that individual case studies would yield a wealth of rich and contextualized information on 21st CCLC ETPD. Individual case studies would provide more narrative accounts and extended observations. With the format of this study, my interactions with the directors involved exploratory interviews with a pre-determined

interview guide format. Conducting case studies would allow me to talk with the directors in a more extensive manner. In a case study format, I would also incorporate additional site observations, additional staff interviews, and more examination of the site histories. This would yield a more complete picture of 21st CCLC ETPD in a particular site.

APPENDIX A

STUDY RECRUITMENT EMAIL

Dear _____ (21st CCLC Director)

Your 21st Century Community Learning Center program site has been identified as one demonstrating exemplary professional development usage related to educational technology. Congratulations!

I am conducting a positive research study on this topic, and I would appreciate your participation. By conducting a case study with you and your site, I hope to learn more about specific applications of professional development that relate to educational technology. I would need to talk with only you, as the director, for specific information, and I would also want to observe your site.

Below, I have attached a copy of the Consent Form which has been approved by the UNC Institutional Review Board. This form provides detailed information about the study and what you would be asked to do. This form also tells you about your rights and protections as a potential research subject. Before any research can begin, you will be asked to sign a printed copy of this form, which I will bring to our first meeting together.

Please email me back to let me know if you are interested in being in this case study of exemplary programs or not, or if you have any questions. I would appreciate hearing from you at your earliest convenience. I have written to a few other directors of exemplary sites too, so it is possible that not everyone who is interested may be chosen. I look forward to hearing from you.

Sincere thanks,
Daniele Bradshaw
UNC-CH Graduate Student
(Phone Number)

(Included case study consent form [Appendix C])

APPENDIX B

INTERVIEW GUIDE QUESTIONS

Personal Information and Views
How long have you been teaching?
Which grade levels and subjects do you teach with 21st CCLC?
How long have you been working with 21st CCLC?

Professional Development Programs and Scheduling
Does your site use any specific curriculum or instructional reform programs?
Do any of these programs require or offer educational technology professional development (ETPD) training?
Is the scheduling for the professional development good or bad? How?
If you could make any changes to the professional development, what would it be?
What obstacles has your site encountered with regards to professional development and how have you attempted to overcome them?
How does 21st CCLC professional development compare to regular school day professional development?

Professional Development Information and the Influence on Educational Technology
What is your view of this professional development? Does it help or hurt technology usage? How?
What kinds of practices are discussed during these professional development sessions?
What kind of technology equipment is discussed during these professional development sessions?
Does the professional development affect your practice in the 21st CCLC class? How?
Do you need any additional support to fully implement the strategies that you learned in the professional development? What kind of extra support?

Educational Technology Usage in 21st CCLC
What do you think about technology usage in 21st CCLC?
What is it you like best about technology usage in 21st CCLC?
Did you learn about this with the 21st CCLC professional development?
What is your biggest frustration with technology usage in 21st CCLC?
What are some promising instructional uses of technology that you have seen in your 21st CCLC site?
In what ways do you use technology for your 21st CCLC students?
Describe some of the most useful pieces of technology equipment or programs for 21st CCLC.

Peer-Social Aspects of Professional Development and Technology Use (influences of fellow teachers, principals, site coordinators, students, parents, etc.)

What role did your director/colleagues play in implementing the professional development and/or technology?

Have you seen a difference in student performance as a result of the professional development in the period since the session(s)?

If students have improved, do you think there is an association between the professional development and the improvements?

If there has been no improvement, what are some of the factors in that?

Is there a question that I need to be asking? What would you like to add to this information?

APPENDIX C

CONSENT FORM FOR INTERVIEW PARTICIPANTS

University of North Carolina-Chapel Hill
Consent to Participate in a Research Study
Adult Participants: North Carolina 21st CCLC Directors: CASE STUDY
Social Behavioral Form

IRB Study #09-2109
Consent Form Version Date: November 10, 2009

Title of Study: An Analysis of Director Views on Educational Technology Professional Development and the Relationship to Educational Technology Instructional Use in 21st Century Community Learning Center Programs

Principal Investigator: L. Daniele Bradshaw, UNC-CH Graduate Student
UNC-Chapel Hill Department: School of Education
Phone number: (Included)
Email Address: (Included)

Faculty Advisor: Dr. Cheryl Bolick, (Email), (Phone Number)

Study Contact Telephone Number: L. Daniele Bradshaw at (Phone Number)
Study Contact Email: L. Daniele Bradshaw at (Email)

What are some general things you should know about research studies?

You are being asked to take part in a research study. To join the study is voluntary. You may refuse to join, or you may withdraw your consent to be in the study, for any reason, without penalty.

Research studies are designed to obtain new knowledge. This new information may help people in the future. You may not receive any direct benefit from being in the research study. There also may be risks to being in research studies.

Details about this study are discussed below. It is important that you understand this information so that you can make an informed choice about being in this research study.

You will be given a copy of this consent form. You should ask me any questions you have about this study at any time.

What is the purpose of this study?

The purpose of this study is to obtain information about the experiences and opinions about professional development and educational technology from individuals involved in the 21st Century Community Learning Center sites in North Carolina. Interviews with directors

about professional development and the influence on educational technology use will assist the 21st CCLC program in identifying specific educational technology and professional development needs for the sites in the future.

How many people will take part in this study?
Several 21st CCLC sites are participating in the CASE STUDY portion of the larger research study. The 21st CCLC directors at each site will provide information in interviews.

How long will your part in this study last?
Your part in the case study will only last from October/November 2009 to the end of your 21st CCLC school year, in May or June/July 2010. The exact number of observations at your site and interviews with you will depend on the amount of information that is gathered during the visits, but I estimate that participation would involve between 5 and 10 visits of about 1 to 2 hours. In 2010, a survey link on professional development and educational technology will be emailed to ALL 21st CCLC directors. That survey is related to the larger research study, but it is separate from this case study portion. You may choose to participate in that survey or not, but we hope that you would be willing to complete that short survey too.

What will happen if you take part in the case study?
As a participant in the case study portion, you will be asked to help me learn more about your site's professional development. This would involve examining some of your professional development materials, observing some planned professional development sessions, learning about the site history, and so forth. I will want to scan, photocopy, or copy down sections of your professional materials for detailed study.

Later on in the year, in a series of interviews, I will then ask you about your thoughts about educational technology and professional development. These interviews will most likely be in person, but they can also take place on the telephone if that is more convenient at times.

Ideally, the interviews will be audio-recorded so that I can capture exactly what you say. I will then transcribe the recordings, so they are available for detailed study. It is possible that direct quotations may be used in the reports, but those quotations will NOT be attributed to you specifically, but instead to "a director." I will also be taking notes during the interviews. If you do not want certain parts of the interviews to be recorded, you can ask me to simply take notes for that part.

In addition, participants will be asked to review documents from their own site, and transcripts of their own interviews with me. This will help me to avoid misinterpreting the information in the documents and interviews.

What are the possible benefits from being in this study?
Research is designed to benefit society by gaining new knowledge. You may not benefit directly from being in this case study. It is possible that the opportunity to reflect about what you have done, what you do now, and what you would like to do in the future in the areas of

professional development and educational technology will be useful to you. Even if you do not benefit directly, this information will assist the 21st CCLC program in identifying specific educational technology and professional development needs for all the sites in the future.

What are the possible risks or discomforts involved from being in this study?
There are no known risks from being in this study. All information will be kept confidential, and you may choose to respond as much or as little as you like to any question.

How will your privacy be protected?
All information that you provide will be kept confidential. The name of your site and your name will not be on any forms or tapes—ID codes will be used instead. Participants will not be identified in any report or publication about this study.

Information obtained from the case study portion and the online survey portion of the study will be shared with the North Carolina Department of Public Instruction only at the general summary level. No individual site data will be provided to any NCDPI officials.

Your decision to participate in this case study and the information you provide will not affect your programs, your funding, or your status with NCDPI and 21st CCLC.

Will you receive anything for being in this study?
You will not receive anything for taking part in this study, but all 21st CCLC sites will be able to learn about the overall study results.

Will it cost you anything to be in this study?
There will be no costs for being in the case study, other than your time.

What if you have questions about this study?
You have the right to ask, and have answered, any questions you may have about this research. If you have questions, or concerns, you should contact me, with the contact information listed on the first page of this form.

What if you have questions about your rights as a research participant?
All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact, anonymously if you wish, the Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu

- -

Title of Study: An Analysis of Director Views on Educational Technology Professional Development and the Relationship to Educational Technology Instructional Use in 21st Century Community Learning Center Programs

Principal Investigator: L. Daniele Bradshaw, UNC-CH Graduate Student

Participant's Agreement:

I have read the information provided above. I have asked all the questions I have at this time. I voluntarily agree to participate in this research case study.

_____

Signature of Research Participant Date

_____

Printed Name of Research Participant

Sign the following section if consent is obtained in-person.

_____

Signature of Research Team Member Obtaining Consent Date

_____

Printed Name of Research Team Member Obtaining Consent

APPENDIX D

STEPS OF CONSTANT COMPARATIVE ANALYSIS IN KEYWORDS

Type of comparison and	Analysis activities	Aim	Questions	Results
1. Comparison within a single interview	Open coding; summarizing core of the interview; finding consensus on interpretation of fragments.	Develop categories understanding	What is the core message of the interview? How are different fragments related? Is the interview consistent? Are there contradictions? What do fragments with the same code have in common?	Summary of the interview; Provisional codes (code tree); Conceptual profile; Extended memos.
2. Comparison between interviews within the same group that is persons who share the same experience	Axial coding; formulating criteria for comparing interviews; hypothesizing about patterns and types.	Conceptualization of the subject produce a typology	Is A talking about the same as B? What do both interviews reveal about the category? What combinations of concepts occur? What interpretations exist for this? What are the similarities and differences between interviews A, B, C … ? What criteria underlie this comparison?	Expansion of code words until all relevant themes are covered; Description of concepts; Criteria for comparing interviews; Clusters of interviews (typology).
3. Comparison of interviews from groups with different perspectives but involved with the subject under study	Triangulating data sources.	Complete the picture enrich the information	What does group 1 say about certain themes and what does group 2 have to say about the same themes? What themes appear in group 1 but not in group 2 and vice versa? Why do they see things similarly or differently? What nuances, details or new information does group 2 supply about group 1?	Verification of provisional knowledge of interviewees from group 1; Additional information; Memos.
4. Comparison in pairs of interviews with two partners belonging to a couple	Selecting themes from open coding that concern the relationship; summarizing the relationship; finding consensus on the interpretation.	Conceptualization of relationship issues understanding of the interaction between partners	What is the relationship like from both perspectives? Are there contradictions/agreements between them? What are the central issues and how are they resolved?	(Conceptual) profile of relationship; Extended memos; Inventory of central issues.
5. Comparing interviews with several couples	Finding criteria to compare couples; hypothesizing about patterns and types.	Find criteria for mutual comparison produce a typology	What are the typical differences between couples A and B? What is the possible reason for this? On which criteria can couples be compared? What patterns exist in the relationships of couples that experience this phenomenon?	Criteria for comparing couples; Clusters of relationships (typology).

Note. From (Boejie, 2002, Boejie, H. (2002). A purposeful approach to the constant comparative method in the analysis of qualitative interviews. *Quality & Quantity, 36*, p. 396).

APPENDIX E

EXPLANATORY LETTER TEXT FOR 21st CCLC SURVEY

Dear 21st CCLC Director:

This is the survey on educational technology professional development (ETPD) in 21st CCLC. ETPD means any kind of trainings/lessons in educational technology. Educational technology can include many programs or equipment, such as computers, Study Island, Smartboards, etc.

This is a chance for you to help 21st CCLC. By participating in this survey, you will help to inform 21st CCLC practices. Your information will allow me to learn about the types of ETPD programs that are being used. You can identify ETPD needs for 21st CCLC. Also, you will help me (L. Daniele Bradshaw) with my doctoral dissertation.

Your participation in this online survey, which is part of a larger study of professional development and educational technology in 21st CCLC programs, is completely voluntary. Your decision to participate, or not, will not affect your programs, your funding, or your status with NCDPI and 21st CCLC. All information that you provide will be kept confidential. No specific person or specific site will be identified in reports. This survey is not administered by NCDPI. Neither officials with NCDPI nor 21st CCLC will know who chose to participate. I am bound by ethics and the rules of the UNC Institutional Review Board (IRB Study # 09-2109).

Please complete this short online survey. There are only 18 questions for directors. It should take you 5 to 10 minutes to complete.

Simply "click" on the box(es) for your selected answer(s). You should see a "check mark" appear. As you move to the next page, your answers will be saved.

Please answer only for your 21st CCLC instructional time and programming, not for your other responsibilities.

Completing this survey gives your consent to be a participant in this study.

Am overall summary of study results will be shared with all 21st CCLC sites after the study is completed.

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions about your rights as a research subject in this study

(IRB Study #: 09-2109) you may contact the Institutional Review Board at UNC-Chapel Hill at 919-966-3113 or by email to IRB_subjects@unc.edu.

You may contact me with any questions you have, with the contact information listed below.

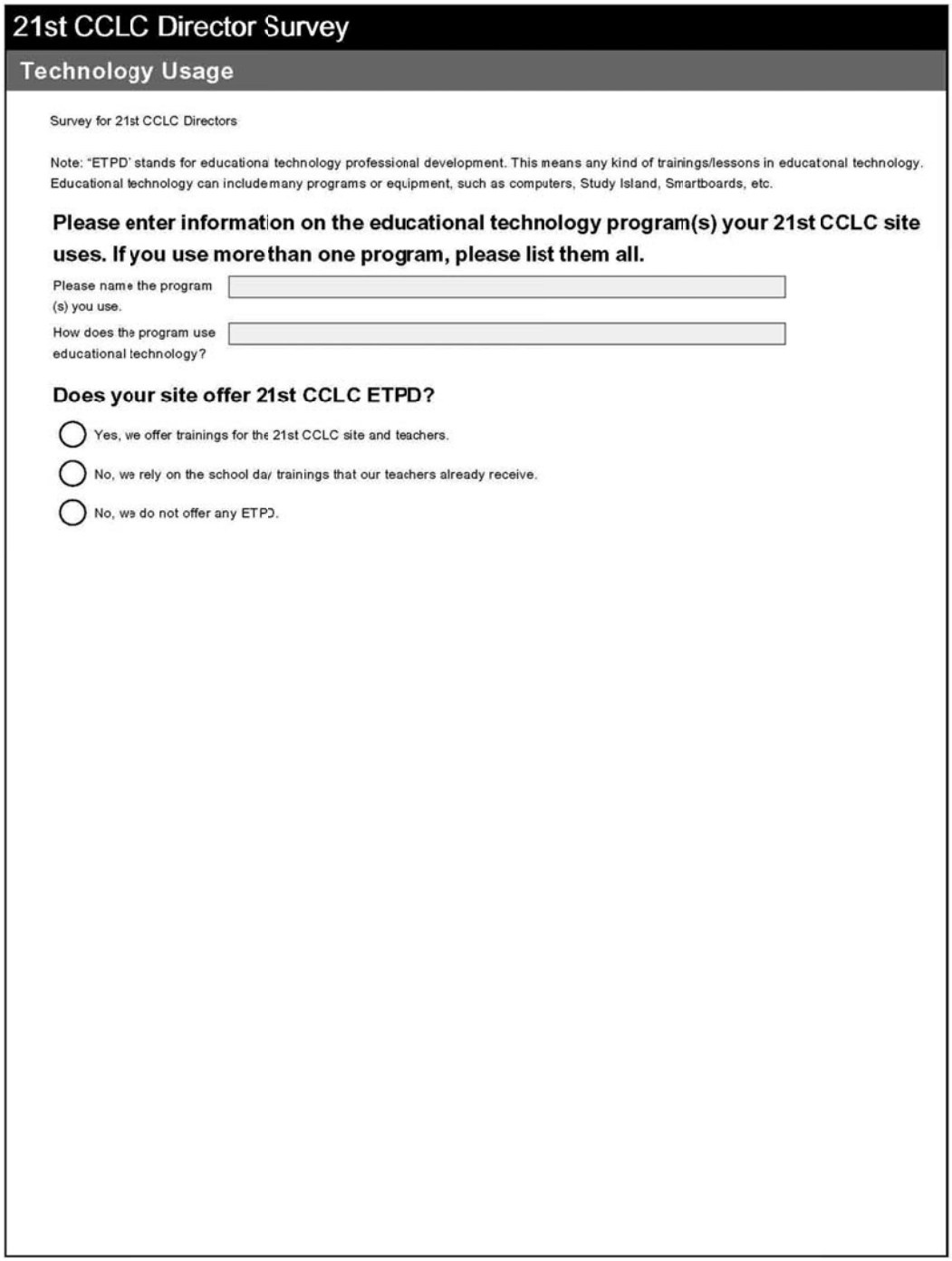
Sincere thanks,

L. Daniele Bradshaw
UNC-CH Graduate Student
(Email)
(Phone Number)

Dr. Cheryl Bolick, Professor
UNC-CH School of Education
(Email)
(Phone Number)

APPENDIX F

21st CCLC SURVEY



21st CCLC Director Survey

Technology Usage

Survey for 21st CCLC Directors

Note: "ETPD' stands for educationa technology professional development. This means any kind of trainings/lessons in educatonal technology. Educational technology can includemany programs or equipment, such as computers, Study Island, Smartboards, etc.

Please enter information on the educational technology program(s) your 21st CCLC site uses. If you use more than one program, please list them all.

Please name the program (s) you use.

How does the program use educational technology?

Does your site offer 21st CCLC ETPD?

- ◯ Yes, we offer trainings for the 21st CCLC site and teachers.
- ◯ No, we rely on the school da/ trainings that our teachers already receive.
- ◯ No, we do not offer any ETPD.

Current 21st CCLC ETPD Users

Which model(s) of ETPD has/have your site participated in, for 21st CCLC?

	Yes	No
Partnering with college/university	◯	◯
Summer Institutes	◯	◯
Vendor/commercial training by outside consultants	◯	◯
Video, CD, or online tutorial	◯	◯
Workshops/Conferences	◯	◯
Teachers train other teachers	◯	◯
Director training of the afterschool teachers	◯	◯
Training by a professional institute or organization	◯	◯
21st CCLC regional training	◯	◯

Other (please specify)

Has your 21st CCLC site had ETPD on these types of software/programs?

	Yes	No
Simulations/Virtual Environments	◯	◯
Reference materials (e.g. online encyclopedias)	◯	◯
Presentation software (e.g. Powerpoint)	◯	◯
Graphic printing software (e.g. Printshop)	◯	◯
Math programs	◯	◯
Science programs	◯	◯
English/Reading programs	◯	◯
Foreign language programs	◯	◯
Business education programs	◯	◯
CAD-CAM, Industrial arts programs	◯	◯
Historical websites	◯	◯
Test Preparation	◯	◯
Word Processing/Spreadsheet/Database	◯	◯
Email	◯	◯
Website development	◯	◯
Music creation software	◯	◯

Other (please specify)

Has your site had ETPD on these types of resources?

	Yes	No
Graphing Calculators	◯	◯
GPS Equipment	◯	◯
Digital camera/camcorder	◯	◯
Smartboards and/or Promethean Boards	◯	◯
PalmPilots or other portable writing devices	◯	◯
Teleconferencing equipment	◯	◯
Learning with cell phones	◯	◯
Wireless networks	◯	◯

Other (please specify)

The following is a list of ETPD characteristics.
(Select all the ones that describe your site's ETPD.)

	Yes	No
EPTD was related to subject area content.	◯	◯
EPTD was appropriate to teachers' varying levels of knowledge.	◯	◯
EPTD was followed by planning time.	◯	◯
EPTD was accessible during school hours (substitutes provided for attendance).	◯	◯
EPTD was accessible during evening/weekend hours.	◯	◯
EPTD was planned or delivered with teacher input.	◯	◯
EPTD was focused on how technology can improve student learning.	◯	◯
EPTD was designed with collaborative practice sessions.	◯	◯

Without 21st CCLC EPTD

Which models of ETPD would be helpful for 21st CCLC? (Select all that apply.)

	Yes	No
Partnering with college/university	◯	◯
Summer Institutes	◯	◯
Vendor/commercial training by outside consultants	◯	◯
Video, CD, or online tutorial	◯	◯
Workshops/Conferences	◯	◯
Teachers train other teachers	◯	◯
Director training of the afterschool teachers	◯	◯
Training by a professional institute or organization	◯	◯
21st CCLC regional training	◯	◯

Other (please specify)

Which types of ETPD software/programs would benefit your 21st CCLC site? (Select all that apply.)

	Yes	No
Simulations/Virtual Environments	◯	◯
Reference materials (e.g. online encyclopedias)	◯	◯
Presentation software (e.g. Powerpoint)	◯	◯
Graphic printing software (e.g. Printshop)	◯	◯
Math programs	◯	◯
Science programs	◯	◯
English/Reading programs	◯	◯
Foreign language programs	◯	◯
Business education programs	◯	◯
CAD-CAM, Industrial arts programs	◯	◯
Historical websites	◯	◯
Test Preparation	◯	◯
Word Processing/Spreadsheet/Database	◯	◯
Email	◯	◯
Website development	◯	◯
Music creation software	◯	◯

Other (please specify)

Which types of resource ETPD would benefit your 21st CCLC site? (Select all that apply.)

	Yes	No
Graphing Calculators	◯	◯
GPS Equipment	◯	◯
Digital camera/camcorder	◯	◯
Smartboards and/or Promethean Boards	◯	◯
PalmPilots or other portable writing devices	◯	◯
Teleconferencing equipment	◯	◯
Learning with cell phones	◯	◯
Wireless networks	◯	◯

Other (please specify)

The following is a list of ETPD characteristics. Which ones would benefit 21st CCLC ETPD?

	Yes	No
ETPD should be related to subject area content.	◯	◯
ETPD should be appropriate to teachers' varying levels of knowledge.	◯	◯
ETPD should be followed by planning time.	◯	◯
ETPD should be accessible during school hours (substitutes provided for attendance).	◯	◯
ETPD should be accessible during evening/weekend hours.	◯	◯
ETPD should be planned or delivered with teacher input.	◯	◯
ETPD should be focused on how technology can improve student learning.	◯	◯
ETPD should be designed with collaborative practice sessions.	◯	◯

Program Views

Note: "ETPD" stands for educational technology professional development. This means any kind of trainings/lessons in educational technology. Educational technology can include many programs or equipment, such as computers, Study Island, Smartboards, etc.

Does your 21st CCLC program have a technology plan that discusses ETPD?

- ◯ Yes
- ◯ No

What kinds of support would help your site with ETPD? (Select all that apply.)

- ☐ 21st CCLC website with information
- ☐ List of programs/software/websites specific to 21st CCLC
- ☐ Information about the quality and effectiveness of ETPD software/websites
- ☐ More support from administrators
- ☐ An on-site support person to lead ETPD implementation
- ☐ Online modules to deliver ETPD
- ☐ Videoconferencing to deliver ETPD
- ☐ Ongoing practice and follow-up ETPD

Other (please specify)

What kinds of ETPD are needed for your 21st CCLC site(s)?

	No Level of Need	Low Level of Need	Medium Level of Need	High Level of Need
Effective/ethical use of the Internet	◯	◯	◯	◯
Evaluating student work using technology	◯	◯	◯	◯
Safety, filters, and Internet blocks to protect students	◯	◯	◯	◯
Teaching with real-world applications of technology	◯	◯	◯	◯
Programs that are specific to afterschool	◯	◯	◯	◯
Classroom management during technology lessons	◯	◯	◯	◯

Other (please specify)

Which of the following are barriers to 21st CCLC ETPD?
(Select all that apply.)

- [ ] Teacher preference for traditional tools
- [ ] Teacher attitudes about ETPD
- [ ] Teacher fatigue and workload
- [ ] Teacher turn-over and attrition
- [ ] Inadequate hardware/software to make training worthwhile
- [ ] Little time for preparing new activities
- [ ] Too many other time commitments
- [ ] Needs for professional development are greater in other areas than in educational technology
- [ ] No pay for the time spent in ETPD
- [ ] ETPD is too expensive
- [ ] Funding issues

Other (please specify)

Which incentives could possibly promote ETPD in 21st CCLC?
(Select all that apply.)

- [ ] Release time from classes and/or other responsibilities
- [ ] Scheduled time in teaching contract for professional development
- [ ] Stipends, tuition, or fee reinbursement
- [ ] Credits toward recertification, CEUs
- [ ] Salary increments or pay increases
- [ ] Recognition or higher ratings on a state evaluation
- [ ] Offering meals during training time
- [ ] Pay for attending ETPD
- [ ] Additional resources for the classroom, e.g. hardware, software
- [ ] None of the above

Other (please specify)

Please share any additional comments regarding the use of ETPD in your site(s) or about this survey.

Demographics

Dear Directors,

The next few questions will be used to determine the representativeness of the sample. For example, urban and rural sites may have different types of responses. Your responses are confidential. This information will NOT be used for identification.

Do you have more than one site?

- ◯ Yes
- ◯ No

Which best describes your 21st CCLC site(s)?
(Select all that apply.)

- ☐ Public school-based site
- ☐ Charter school-based site
- ☐ Church-based site
- ☐ Non-church community center

Other (please specify)

What is/are the grade level(s) of your site(s)?
(Select all that apply.)

- ☐ Elementary school
- ☐ Middle school
- ☐ High school

How old is your 21st CCLC program?

- ◯ Less than one school year
- ◯ 1 year
- ◯ 2 years
- ◯ 3 years
- ◯ 4 years
- ◯ 5 years or more

How long have you worked as a director with the 21st CCLC program?

- ◯ Less than one school year
- ◯ 1 year
- ◯ 2 years
- ◯ 3 years
- ◯ 4 years
- ◯ 5 years or more

Directors: This next zip code question will ONLY be used to determine urban, rural, and suburban representation.

What is your office/school zip code?

APPENDIX G

NOTIFICATION EMAIL FOR OTHER OFFICIALS

Dear _____(*school principal, school superintendent, church, or community center director of the location that houses the site; these programs are administered through the NC Department of Public Instruction and the US Department of Education but conducted at various locations*)

This is a notification email, for your records. Your 21st Century Community Learning Center (CCLC) program site at (identify specific site) has been identified as one demonstrating exemplary professional development usage related to educational technology. Congratulations!

I am conducting a positive research study on this topic. (Specific director and specific site) has agreed to participate in this case study, to provide information that may help to inform best practices. By conducting a case study, I will learn more about specific applications of professional development that relate to educational technology.

Below, I have attached a copy of the Consent Form which has been approved by the UNC Institutional Review Board. The director of your center has already reviewed the information in this form and has agreed to participate in the case study. The Consent Form provides detailed information about the case study, and about the rights and protections the director has as a research subject.

Please contact me or my academic advisor (Dr. Cheryl Bolick) if you have questions or concerns.

Sincere thanks,
Daniele Bradshaw
UNC-CH Graduate Student
(Phone Number)

(Dr. Cheryl Bolick, UNC School of Education, (Email), (Phone Number)

(Included case study consent form [Appendix C])

APPENDIX H

TABLES FOR SURVEY RESULTS

Demographics Section of Survey: Demographic Questions for All Survey Respondents

Demographics Section, Question 1: Do you have more than one site?

Table H1
Multiple Sites

	FREQUENCY	PERCENT
Yes	30	63.8%
No	12	25.5%
Missing response	5	10.6%
Total	47	100.0%

Demographics Section, Question 2: Which best describes your 21st CCLC site(s)? (Select all that apply.)

Table H2
Types of Sites

TYPE OF 21st CCLC SITE	FREQUENCY	PERCENT
Public school-based site	27	57.4%
Charter school-based site	2	4.3%
Church-based site	2	4.3%
Non-church community center	6	12.8%
Public school-based site and non-church community center	3	6.4%
Public school-based site and church based site	1	2.1%
Public school-based site and church based site and non-church community center	1	2.1%
Missing response	5	10.6%
Total	47	100.0%

Demographics Section, Question 3: What is/are the grade level(s) of your site(s)? (Select all that apply.)

Table H3
Grade Levels

GRADE LEVELS	FREQUENCY	PERCENT
Elementary	9	19.1%
Middle school	5	10.6%
High school	4	8.5%
Elementary and middle school	6	12.8%
Elementary and middle school and high school	17	36.2%
Middle school and high school	1	2.1%
Missing response	5	10.6%
Total	47	100.0%

Demographics Section, Question 4: How old is your 21st CCLC program?

Table H4
Program Ages

PROGRAM AGE	FREQUENCY	PERCENT
Less than one school year	10	21.3%
1 year	3	6.4%
2 years	11	23.4%
3 years	4	8.5%
4 years	3	6.4%
5 years or more	10	21.3%
Missing response	6	12.8%
Total	47	100.0%

Demographics Section, Question 5: How long have you worked as a director with the 21st CCLC program?

Table H5
Director Tenure

DIRECTOR TENURE	FREQUENCY	PERCENT
Less than one school year	12	25.5%
1 year	9	19.1%
2 years	7	14.9%
3 years	3	6.4%
4 years	2	4.3%
5 years or more	8	17.0%
Missing response	6	12.8%
Total	47	100.0%

Demographics Section, Question 6: What is your office/school zip code?

Table H6
Geographic Setting, as Determined by 2000 Census Zip Code Mapping

GEOGRAPHY	FREQUENCY	PERCENT
Rural	17	36.2%
Suburban	16	34.0%
Urban	7	14.9%
Missing response	7	14.9%
Total	47	100.0%

Technology Usage Section of Survey: Educational Technology and ETPD Questions for All Respondents

Technology Usage Section, Question 1: Please enter information on the educational technology program(s) your 21st CCLC site uses. If you use more than one program, please list them all.

Table H7
Educational Technology Programs

PROGRAM	FREQUENCY	PERCENT
Study Island	15	34.1%
Computers	10	22.7%
Smartboards/Promethean Boards	4	9.1%
Class Scape	4	9.1%
Read 180	4	9.1%
IXL Math	3	6.8%
SuccessMaker	2	4.5%
Microsoft Office	2	4.5%
Accelerated Reader	2	4.5%
Middleweb.com	1	2.3%
DPI programs	1	2.3%
(District name) ASEP	1	2.3%

(table continues)

PROGRAM	FREQUENCY	PERCENT
Reading/Math Academy	1	2.3%
Digital Connectors	1	2.3%
Star Fall	1	2.3%
Fun Brain	1	2.3%
Wii	1	2.3%
Online educational games	1	2.3%
Aboard Spaceship Earth	1	2.3%
Google Earth	1	2.3%
Study Bridge	1	2.3%
United Streaming	1	2.3%
Ncpublicschools.org (EOC sample items)	1	2.3%
Regentsprep.org	1	2.3%
Kidactivities.net	1	2.3%
JATO	1	2.3%
Orchard	1	2.3%
Destination Success	1	2.3%
Renzulli Learning	1	2.3%
TechXcite	1	2.3%

(table continues)

PROGRAM	FREQUENCY	PERCENT
Wizi Wig	1	2.3%
Learning Bridges	1	2.3%
Digital projectors	1	2.3%
Orchard	1	2.3%
Math First	1	2.3%
Voyager Passport-Ticket to Read	1	2.3%
STAR Reading and STAR Math	1	2.3%
Buckle Down	1	2.3%
Ladders to Success	1	2.3%
Speak for Success	1	2.3%
EOG WebAchiever	1	2.3%
EDUSS	1	2.3%
Hot Dot	1	2.3%
ELMOs	1	2.3%
OdysseyWare	1	2.3%
FastForward	1	2.3%
WHYTRY	1	2.3%
TeacherVision	1	2.3%

(table continues)

PROGRAM	FREQUENCY	PERCENT
Education World	1	2.3%
GE Phonics	1	2.3%
Advantage Academic Software	1	2.3%
K to the 8th Power	1	2.3%
Brainchild	1	2.3%
First in Math	1	2.3%
Microsoft Photo and Video Software	1	2.3%
Tune Into Reading	1	2.3%
PLATO Learning	1	2.3%
Missing response	3	6.4%
Total	47	100.0%

Technology Usage Section, Question 1.5: How does the program use educational technology?

Table H8
Use of Educational Technology

USE OF EDUCATIONAL TECHNOLOGY	FREQUENCY	PERCENT
Interactive learning	6	14.6%
Promotes reading and math help	5	12.2%
Entertainment/Games	4	9.8%
Remediation aligned with classroom instruction	3	7.3%
Preparation for End of Course /End of Grade test	3	7.3%
Benchmark assessments	3	7.3%
Curriculum integration	2	4.9%
Student independent study	2	4.9%
Alignment with NC Standard course of study	2	4.9%
Academic enrichment	2	4.9%
Research	2	4.9%
Communication	2	4.9%
Practicing skills	2	4.9%
Tutorials	2	4.9%
Computer labs	1	2.4%

(table continues)

USE OF EDUCATIONAL TECHNOLOGY	FREQUENCY	PERCENT
Learning about computer applications	1	2.4%
Provides cultural information	1	2.4%
Promotes student critical thinking	1	2.4%
Student individualized study	1	2.4%
Homework help	1	2.4%
Projects	1	2.4%
Group instruction	1	2.4%
Staff development	1	2.4%
Sustainability requirement	1	2.4%
Missing response	6	12.8%
Total	47	100.0%

Technology Usage Section, Question 2: Does your site offer 21st CCLC ETPD?

Table H9
Offering 21st CCLC ETPD

21st CCLC ETPD	FREQUENCY	PERCENT
Yes, we offer trainings for the 21st CCLC site and teachers.	25	53.2%
No, we rely on the school day trainings that our teachers already receive.	16	34.0%
No, we do not offer any ETPD.	5	10.6%
Missing response	1	2.1%
Total	47	100.0%

Current 21st CCLC ETPD Users Section of Survey: Questions for Directors in Sites with 21st CCLC ETPD

Current 21st CCLC ETPD Users Section, Question 1: Which model(s) of ETPD has/have your site participated in, for 21st CCLC?

Table H10
ETPD Models for Directors in Sites with 21st CCLC ETPD

ETPD MODELS	YES	NO	MISSING	TOTAL
Partnering with college/university	52.0% (13)	36.0% (9)	12.0% (3)	25
Summer Institutes	40.0% (10)	48.0% (12)	12.0% (3)	25
Vendor/commercial training by outside consultants	64.0% (16)	28.0% (7)	8.0% (2)	25
Video, CD, or online tutorial	52.0% (13)	20.0% (5)	28.0% (7)	25
Workshops/Conferences	76.0% (19)	16.0% (4)	8.0% (2)	25
Teachers train other teachers	72.0% (18)	12.0% (3)	16.0%(4)	25
Director training of the afterschool teachers	76.0% (19)	8.0% (2)	16.0% (4)	25
Training by a professional institute or organization	40.0% (10)	44.0% (11)	16.0% (4)	25
21st CCLC regional training	80.0% (20)	12.0% (3)	8.0% (2)	25

Current 21st CCLC ETPD Users Section, Question 2: Has your 21st CCLC site had ETPD on these types of software/programs?

Table H11
Software ETPD for Directors in Sites with 21st CCLC ETPD

SOFTWARE ETPD	YES	NO	MISSING	TOTAL
Simulations/Virtual Environments	12.0% (3)	68.0% (17)	20.0% (5)	25
Reference materials (e.g. online encyclopedias)	56.0% (14)	28.0% (7)	16.0% (4)	25
Presentation software (e.g. Powerpoint)	72.0% (18)	20.0% (5)	8.0% (2)	25
Graphic printing software (e.g. Printshop)	40.0% (10)	36.0% (9)	24.0% (6)	25
Math programs	84.0% (21)	12.0% (3)	4.0% (1)	25
Science programs	64.0% (16)	32.0% (8)	4.0% (1)	25
English/Reading programs	88.0% (22)	4.0% (1)	8.0% (2)	25
Foreign language programs	24.0% (6)	56.0% (14)	20.0% (5)	25
Business education programs	20.0% (5)	56.0% (14)	24.0% (6)	25
CAD-CAM, Industrial arts programs	8.0% (2)	68.0% (17)	24.0% (6)	25
Historical websites	44.0% (11)	32.0% (8)	24.0% (6)	25

(table continues)

SOFTWARE ETPD	YES	NO	MISSING	TOTAL
Test Preparation	88.0% (22)	4.0% (1)	8.0% (2)	25
Word Processing/Spreadsheet/Database	68.0% (17)	20.0% (5)	12.0% (3)	25
Email	56.0% (14)	28.0% (7)	16.0% (4)	25
Music creation software	12.0% (3)	60.0% (15)	28.0% (7)	25

Current 21st CCLC ETPD Users Section, Question 3: Has your site had ETPD on these types of resources?

Table H12
Resource ETPD for Directors in Sites with 21st CCLC ETPD

RESOURCE ETPD	YES	NO	MISSING	TOTAL
Graphing Calculators	32.0% (8)	40.0% (10)	28.0% (7)	25
GPS Equipment	16.0% (4)	60.0% (15)	24.0% (6)	25
Digital camera/camcorder	52.0% (13)	32.0% (8)	16.0% (4)	25
Smartboards and/or Promethean Boards	60.0% (15)	28.0% (7)	12.0% (3)	25
PalmPilots or other portable writing devices	8.0% (2)	64.0% (16)	28.0% (7)	25
Teleconferencing equipment	28.0% (7)	52.0% (13)	20.0% (5)	25
Learning with cell phones	16.0% (4)	56.0% (14)	28.0% (7)	25
Wireless networks	48.0% (12)	28.0% (7)	24.0% (6)	25

Current 21st CCLC ETPD Users Section, Question 4: The following is a list of ETPD characteristics. (Select all the ones that describe your site's ETPD.)

Table H13
ETPD Characteristics for Directors in Sites with 21st CCLC ETPD

ETPD CHARACTERISTICS	YES	NO	MISSING	TOTAL
EPTD was related to subject area content.	88.0% (22)	0.0% (0)	12.0% (3)	25
EPTD was appropriate to teachers' varying levels of knowledge.	76.0% (19)	4.0% (1)	20.0% (5)	25
EPTD was followed by planning time.	48.0% (12)	32.0% (8)	20.0% (5)	25
EPTD was accessible during school hours (substitutes provided for attendance).	32.0% (8)	36.0% (9)	32.0% (8)	25
EPTD was accessible during evening/weekend hours.	60.0% (15)	16.0% (4)	24.0% (6)	25
EPTD was planned or delivered with teacher input.	60.0% (15)	16.0% (4)	24.0% (6)	25
EPTD was focused on how technology can improve student learning.	76.0% (19)	12.0% (3)	12.0% (3)	25
EPTD was designed with collaborative practice sessions.	44.0% (11)	40.0% (10)	16.0% (4)	25

Without 21st CCLC ETPD Section of Survey: Questions for Directors in Sites without 21st CCLC ETPD

Without 21st CCLC ETPD Section, Question 1: Which models of ETPD would be helpful for 21st CCLC? (Select all that apply.)

Table H14
Desired ETPD Models for Directors in Sites without 21st CCLC ETPD

ETPD MODELS	YES	NO	MISSING	TOTAL
Partnering with college/university	90.5% (19)	4.8% (1)	20.0% (5)	25
Summer Institutes	71.4% (15)	19.0% (4)	24.0% (6)	25
Vendor/commercial training by outside consultants	66.7% (14)	23.8% (5)	24.0% (6)	25
Video, CD, or online tutorial	85.7% (18)	9.5% (2)	20.0% (5)	25
Workshops/Conferences	81.0% (17)	9.5% (2)	24.0% (6)	25
Teachers train other teachers	90.5% (19)	4.8% (1)	20.0% (5)	25
Director training of the afterschool teachers	71.4% (15)	9.5% (2)	32.0% (8)	25
Training by a professional institute or organization	66.7% (14)	9.5% (2)	36.0% (9)	25
21st CCLC regional training	85.7% (18)	4.8% (1)	24.0% (6)	25

Without 21st CCLC ETPD Section, Question 2: Which types of ETPD software/programs would benefit your 21st CCLC site? (Select all that apply.)

Table H15
Desired Software ETPD for Directors in Sites without 21st CCLC ETPD

SOFTWARE ETPD	YES	NO	MISSING	TOTAL
Simulations/Virtual Environments	76.2% (16)	14.3% (3)	24.0% (6)	25
Reference materials (e.g. online encyclopedias)	71.4% (15)	19.0% (4)	24.0% (6)	25
Presentation software (e.g. Powerpoint)	61.9% (13)	23.8% (5)	28.0% (7)	25
Graphic printing software (e.g. Printshop)	81.0% (17)	9.5% (2)	24.0% (6)	25
Math programs	100.0% (21)	0.0% (0)	16.0% (4)	25
Science programs	90.5% (19)	4.8% (1)	20.0% (5)	25
English/Reading programs	95.2% (20)	0.0% (0)	20.0% (5)	25
Foreign language programs	57.1% (12)	28.6% (6)	28.0% (7)	25
Business education programs	47.6% (10)	33.3% (7)	32.0% (8)	25
CAD-CAM, Industrial arts programs	42.9% (9)	33.3% (7)	36.0% (9)	25
Historical websites	66.7% (14)	14.3% (3)	32.0% (8)	25
Test Preparation	81.0% (17)	19.0% (4)	16.0%(4)	25

(table continues)

SOFTWARE ETPD	YES	NO	MISSING	TOTAL
Word Processing/Spreadsheet/Database	76.2% (16)	9.5% (2)	28.0% (7)	25
Email	52.4% (11)	23.8% (5)	36.0% (9)	25
Website development	81.0% (17)	14.3% (3)	20.0% (5)	25
Music creation software	76.2% (16)	14.3% (3)	24.0% (6)	25

Without 21st CCLC ETPD Section, Question 3: Which types of resource ETPD would benefit your 21st CCLC site? (Select all that apply.)

Table H16
Desired Resource ETPD for Directors in Sites without 21st CCLC ETPD

RESOURCE ETPD	YES	NO	MISSING	TOTAL
Graphing Calculators	57.1% (12)	28.6% (6)	28.0% (7)	25
GPS Equipment	47.6% (10)	33.3% (7)	32.0% (8)	25
Digital camera/camcorder	90.5% (19)	0.0% (0)	24.0% (6)	25
Smartboards and/or Promethean Boards	95.2% (20)	4.8% (1)	16.0% (4)	25
PalmPilots or other portable writing devices	47.6% (10)	28.6% (6)	36.0% (9)	25
Teleconferencing equipment	47.6% (10)	38.1% (8)	28.0% (7)	25
Learning with cell phones	47.6% (10)	38.1% (8)	28.0% (7)	25
Wireless networks	85.7% (18)	4.8% (1)	24.0% (6)	25

Without 21st CCLC ETPD Section, Question 4: The following is a list of ETPD characteristics. Which ones would benefit 21st CCLC ETPD?

Table H17
Desired ETPD Characteristics for Directors in Sites without 21st CCLC ETPD

ETPD CHARACTERISTICS	YES	NO	MISSING	TOTAL
EPTD was related to subject area content.	100.0% (21)	0.0% (0)	16.0% (4)	25
EPTD was appropriate to teachers' varying levels of knowledge.	95.2% (20)	0.0% (0)	20.0% (5)	25
EPTD was followed by planning time.	85.7% (18)	4.8% (1)	24.0% (6)	25
EPTD was accessible during school hours (substitutes provided for attendance).	66.7% (14)	19.0% (4)	28.0% (7)	25
EPTD was accessible during evening/weekend hours.	66.7% (14)	19.0% (4)	28.0% (7)	25
EPTD was planned or delivered with teacher input.	90.5% (19)	4.8% (1)	20.0% (5)	25
EPTD was focused on how technology can improve student learning.	95.2% (20)	0.0% (0)	20.0% (5)	25
EPTD was designed with collaborative practice sessions.	85.7% (18)	0.0% (0)	28.0% (7)	25

Program Views Section of Survey: Program View Questions Asked of All Respondents

Program Views Section, Question 1: Does your 21st CCLC program have a technology plan that discusses ETPD?

Table H18
Technology Plan for 21st CCLC ETPD

	FREQUENCY	PERCENT
Yes	12	25.5%
No	29	61.7%
Missing response	6	12.8%
Total	47	100.0%

Program Views Section, Question 2: What kinds of support would help your site with ETPD? (Select all that apply.)

Table H19
21st CCLC ETPD Support

ETPD SUPPORT	FREQUENCY	PERCENT
21st CCLC website with information	32	68.1%
List of programs/software/websites specific to 21st CCLC	39	83.0%
Information about the quality and effectiveness of ETPD software/websites	27	57.4%
More support from administrators	12	25.5%
An on-site support person to lead ETPD implementation	14	29.8%
Online modules to deliver ETPD	28	59.6%
Videoconferencing to deliver ETPD	21	44.7%
Ongoing practice and follow-up ETPD	28	59.6%

Program Views Section, Question 3: What kinds of ETPD are needed for your 21st CCLC site(s)?

Table H20
21st CCLC ETPD Needs

ETPD NEEDS	NO LEVEL OF NEED	LOW LEVEL OF NEED	MEDIUM LEVEL OF NEED	HIGH LEVEL OF NEED	MISSING	TOTAL
Effective/ethical use of the Internet	29.8% (14)	21.3% (10)	10.6% (5)	25.5% (12)	24.0% (6)	47
Evaluating student work using technology	6.4% (3)	19.1% (9)	40.4% (19)	23.4% (11)	20.0% (5)	47
Safety, filters, and Internet blocks to protect students	14.9% (7)	25.5% (12)	12.8% (6)	34.0% (16)	24.0% (6)	47
Teaching with real-world applications of technology	2.1% (1)	8.5% (4)	31.9% (15)	44.7% (21)	24.0% (6)	47
Programs that are specific to afterschool	2.1% (1)	10.6% (5)	19.1% (9)	55.3% (26)	24.0% (6)	47
Classroom management during technology lessons	12.8% (6)	19.1% (9)	29.8% (14)	21.3% (10)	32.0% (8)	47

Program Views Section, Question 4: Which of the following are barriers to 21st CCLC ETPD? (Select all that apply.)

Table H21
21st CCLC ETPD Barriers

ETPD BARRIERS	FREQUENCY	PERCENT
Teacher preference for traditional tools	16	34.0%
Teacher attitudes about ETPD	12	25.5%
Teacher fatigue and workload	19	40.4%
Teacher turn-over and attrition	9	19.1%
Inadequate hardware/software to make training worthwhile	20	42.6%
Little time for preparing new activities	24	51.1%
Too many other time commitments	17	36.2%
Needs for professional development are greater in other areas than in educational technology	10	21.3%
No pay for the time spent in ETPD	14	29.8%
ETPD is too expensive	15	31.9%
Funding issues	27	57.4%

Program Views Section, Question 5: Which incentives could possibly promote ETPD in 21st CCLC? (Select all that apply.)

Table H22
21st CCLC ETPD Incentives

ETPD INCENTIVES	FREQUENCY	PERCENT
Release time from classes and/or other responsibilities	20	42.6%
Scheduled time in teaching contract for professional development	16	34.0%
Stipends, tuition, or fee reimbursement	25	53.2%
Credits toward recertification, CEUs	27	57.4%
Salary increments or pay increases	17	36.2%
Recognition or higher ratings on a state evaluation	11	23.4%
Offering meals during training time	17	36.2%
Pay for attending ETPD	26	55.3%
Additional resources for the classroom, e.g. hardware, software	31	66.0%
None of the above	1	2.1%

APPENDIX I

CROSSTABULATIONS AND COMPARISONS OF SELECTED SURVEY ITEMS

Crosstabulations of Selected Factors

Table I1
Crosstabulation of Offering 21st CCLC ETPD and Multiple Sites

Count

		MORE THAN ONE SITE		
		Yes	No	Total
USE ETPD	Yes, we offer trainings for the 21st CCLC site and teachers.	**55.2% (16)**	33.3% (4)	20
	No, we rely on the school day trainings that our teachers already receive.	34.5% (10)	50.0% (6)	16
	No, we do not offer any ETPD.	10.3% (3)	16.7% (2)	5
Total		29	12	41

This crosstabulation examined if offering 21st CCLC ETPD differed among directors with one site or directors with more than one site. This crosstabulation involved Question 2 from the Technology Usage Section and Question 1 from the Demographics Section. The qualitative research indicated that teachers with multiple sites may have had difficulty with providing 21st CCLC ETPD. However, based on this crosstabulation, the quantitative research did not support this claim. Directors with multiple sites (55.2%) had the highest percentages of offering 21st CCLC ETPD, more than directors with single sites (33.3%). This is an interesting result, because offering 21st CCLC ETPD to multiple sites usually involves additional planning and work.

Table I2
Crosstabulation of 21st CCLC ETPD Use and Age of Program

Count

		AGE OF PROGRAM						
		Less than one school year	1 year	2 years	3 years	4 years	5 years or more	Total
USE ETPD	Yes, we offer trainings for the 21st CCLC site and teachers.	**55.6%** (5)	**33.3%** (1)	**54.5** (6)	50.0% (2)	33.3% (1)	50.0% (5)	50.0% (20)
	No, we rely on the school day trainings that our teachers already receive.	22.2% (2)	33.3% (1)	36.4% (4)	25.0% (1)	66.7% (2)	50.0% (5)	37.5% (15)
	No, we do not offer any ETPD.	22.2% (2)	33.3% (1)	9.1% (1)	25.0% (1)	0.0% (0)	0.0% (0)	12.5% (5)
Total		9	3	11	4	3	10	40

This crosstabulation examined if offering 21st CCLC ETPD differed among programs of various ages. This crosstabulation involved Question 2 from the Technology Usage Section and Question 4 from the Demographics Section. 21st CCLC ETPD usage varied little by age of program. Directors in programs that had operated for *Less than one school year* (55.6%) had the highest percentage. This was a surprising result, even though it was only slightly higher than the average of 50.0%. The qualitative research indicated that newer sites may have had difficulty with providing 21st CCLC ETPD. Results of this quantitative crosstabulation did not support this claim.

Table I3
Crosstabulation of 21st CCLC ETPD Use and Grade Levels of Site

Count

		USE ETPD			
		Yes, we offer trainings for the 21st CCLC site and teachers.	No, we rely on the school day trainings that our teachers already receive.	No, we do not offer any ETPD.	Total
GRADE LEVELS OF SITE	Elementary	44.4% (4)	55.6% (5)	0.0% (0)	9
	Middle school	60.0% (3)	40.0% (2)	0.0% (0)	5
	High school	50.0% (2)	25.0% (1)	25.0% (1)	4
	Elementary and middle school	50.0% (8)	31.3% (5)	18.8% (3)	16
	Elementary and middle school and high school	33.3% (2)	50.0% (3)	16.7% (1)	6
	Middle school and high school	100.0% (1)	0.0% (0)	0.0% (0)	1
Total		20	16	5	41

This crosstabulation examined if offering 21st CCLC ETPD differed among grade levels. This crosstabulation involved Question 2 from the Technology Usage Section and Question 3 from the Demographics Section. Grade levels of sites did not show a major difference in 21st CCLC ETPD usage. Directors in *elementary and middle school* (50.0%, or 8) sites had the highest numbers of indicating that they offered 21st CCLC ETPD. The director serving a site with *middle school and high school* (100.0%) had the highest percentage for offering 21st CCLC ETPD; however, there's only one director in this category.

Comparisons between the Responses of Directors in Sites with 21st CCLC ETPD and Directors in Sites without 21st CCLC ETPD

Table I4
Comparison of 21st CCLC ETPD Models between Directors in Sites with 21st CCLC ETPD and Directors in Sites without 21st CCLC ETPD

ETPD MODELS	WITH 21ST CCLC ETPD EXPERIENCE	OPINIONS FOR WITHOUT 21ST CCLC ETPD
Partnering with college/university	52.0% (R6)	90.5% (R1)
Summer Institutes	40.0% (R8)	71.4% (R6)
Vendor/commercial training by outside consultants	64.0% (R5)	66.7% (R8)
Video, CD, or online tutorial	52.0% (R7)	85.7% (R3)
Workshops/Conferences	76.0% (R2)	81.0% (R5)
Teachers train other teachers	72.0% (R4)	90.5% (R1)
Director training of the afterschool teachers	76.0% (R2)	71.4% (R6)
Training by a professional institute or organization	40.0% (R8)	66.7% (R8)
21st CCLC regional training	80.0% (R1)	85.7% (R3)

Directors in sites with 21st CCLC ETPD were asked to identify the models of ETPD that their site(s) participated in, for Question 1 of the Current 21st CCLC ETPD Users Section. *Directors in sites without 21st CCLC ETPD* were asked to identify the types of ETPD models that they viewed as potentially helpful, in Question 1 of the Without 21st

CCLC ETPD Section. Table I4 compares the responses of each group. (Note: The R in the following tables stands for *Rank*. Responses were ranked based on response percentages).

The top three responses of *directors in sites with 21st CCLC ETPD* were: *21st CCLC regional training* (80.0%), *Director training of the afterschool teachers* (76.0%), and *Workshops/conferences* (76.0%). *21st CCLC regional training* was also ranked in the top three among *directors in sites without 21st CCLC ETPD*. Therefore, 21st CCLC regional training was important to both groups. This supports the findings of the qualitative study.

Table I5

Comparison of 21st CCLC Software ETPD between Directors in Sites with 21st CCLC ETPD and Directors in Sites without 21st CCLC ETPD

SOFTWARE ETPD	WITH 21ST CCLC ETPD EXPERIENCE	OPINIONS FOR WITHOUT 21ST CCLC ETPD
Simulations/Virtual Environments	12.0% (R14)	76.2% (R7)
Reference materials (e.g. online encyclopedias)	56.0% (R7)	71.4% (R10)
Presentation software (e.g. Powerpoint)	72.0% (R4)	61.9% (R12)
Graphic printing software (e.g. Printshop)	40.0% (R10)	81.0% (R4)
Math programs	84.0% (R3)	100.0% (R1)
Science programs	64.0% (R6)	90.5% (R3)
English/Reading programs	88.0% (R1)	95.2% (R2)
Foreign language programs	24.0% (R12)	57.1% (R13)
Business education programs	20.0% (R13)	47.6% (R15)
CAD-CAM, Industrial arts programs	8.0% (R16)	42.9% (R16)
Historical websites	44.0% (R9)	66.7% (R11)
Test Preparation	88.0% (R1)	81.0% (R4)
Word Processing/Spreadsheet/Database	68.0% (R5)	76.2% (R7)
Email	56.0% (R7)	52.4% (R14)
Website development	32.0% (R11)	81.0% (R4)
Music creation software	12.0% (R14)	76.2% (R7)

Directors in sites with 21st CCLC ETPD were asked to identify the types of ETPD software/programs that their site(s) used in Question 2 of the Current 21st CCLC ETPD Users Section. *Directors in sites without 21st CCLC ETPD* were asked to identify ETPD software/programs that would benefit their site(s) in Question 2 of the Without 21st CCLC ETPD Section. Table I5 compares the responses of each group.

The top three ranking responses among *directors in sites with 21st CCLC ETPD* were *test preparation* (88.0%), *English/reading programs* (88.0%), and *math programs* (84.0%). These were also ranked high among *directors in sites without 21st CCLC ETPD*, with *math programs* (100%) being first and *English/reading programs* (95.2%) being second. *Test preparation* (81.0%) was ranked in the fourth position, behind *science programs* (90.5%) in third place. These results support the qualitative data. Academic test preparation software/programs are valued for 21st CCLC ETPD.

Table I6

Comparison of 21st CCLC Resource ETPD between Directors in Sites with 21st CCLC ETPD and Directors in Sites without 21st CCLC ETPD

RESOURCE ETPD	WITH 21ST CCLC ETPD EXPERIENCE	OPINIONS FOR WITHOUT 21ST CCLC ETPD
Graphing Calculators	32.0% (R4)	57.1% (R4)
GPS Equipment	16.0% (R6)	47.6% (R5)
Digital camera/camcorder	52.0% (R2)	90.5% (R2)
Smartboards and/or Promethean Boards	60.0% (R1)	95.2% (R1)
PalmPilots or other portable writing devices	8.0% (R8)	47.6% (R5)
Teleconferencing equipment	28.0% (R5)	47.6% (R5)
Learning with cell phones	16.0% (R6)	47.6% (R5)
Wireless networks	48.0% (R3)	85.7% (R3)

Directors in sites with 21st CCLC ETPD were asked to identify whether they had ETPD on certain resources in Question 3 of the Current 21st CCLC ETPD Users Section. *Directors in sites without 21st CCLC ETPD* were asked to identify resource ETPD that would benefit their site(s) in Question 3 of the Without 21st CCLC ETPD Section. Table I6 compares the responses of each group.

The top three responses among *directors in sites with 21st CCLC ETPD* were *Smartboards and/or Promethean Boards* (60.0%), *digital camera/camcorder* (52.0%), and *wireless networks* (48.0%). These were also ranked as the highest three among *directors in sites without 21st CCLC ETPD.*

Table I7
Comparison of 21st CCLC ETPD Characteristics between Directors in Sites with 21st CCLC ETPD and Directors in Sites without 21st CCLC ETPD

ETPD CHARACTERISTICS	WITH 21ST CCLC ETPD EXPERIENCE	OPINIONS FOR WITHOUT 21ST CCLC ETPD
EPTD was related to subject area content.	88.0% (R1)	100.0% (R1)
EPTD was appropriate to teachers' varying levels of knowledge.	76.0% (R2)	95.2% (R2)
EPTD was followed by planning time.	48.0% (R6)	85.7% (R5)
EPTD was accessible during school hours (substitutes provided for attendance).	32.0% (R8)	66.7% (R7)
EPTD was accessible during evening/weekend hours.	60.0% (R4)	66.7% (R7)
EPTD was planned or delivered with teacher input.	60.0% (R4)	90.5% (R4)
EPTD was focused on how technology can improve student learning.	76.0% (R2)	95.2% (R2)
EPTD was designed with collaborative practice sessions.	44.0% (R7)	85.7% (R5)

Directors in sites with 21st CCLC ETPD were asked to identify the characteristics of their ETPD in Question 4 of the Current 21st CCLC ETPD Users Section. *Directors in sites without 21st CCLC ETPD* were asked to identify ETPD characteristics that would benefit their site(s) in Question 4 of the Without 21st CCLC ETPD Users Section. Table I7 compares the responses of each group.

The top three ETPD characteristics among *directors in sites with 21st CCLC ETPD* were: *ETPD was related to subject area content* (88.0%), *EPTD was appropriate to teachers' varying levels of knowledge* (76.0%), and *ETPD was focused on how technology can improve student learning* (76.0%). These same three ETPD characteristics were valued by *directors in sites without 21st CCLC ETPD,* with different percentages for *ETPD was related to subject area content* (100.0%), *EPTD was appropriate to teachers' varying levels of knowledge* (95.2%), and *ETPD was focused on how technology can improve student learning* (95.2%). The results support the findings of the qualitative study.

Comparisons between the Responses of Directors across Varying Geographic Settings

Table I8
Crosstabulation of 21st CCLC ETPD Use and Site Location(s)

Count

		USE ETPD			
		Yes, we offer trainings for the 21st CCLC site and teachers.	No, we rely on the school day trainings that our teachers already receive.	No, we do not offer any ETPD.	Total
LOCATION	Rural	43.8% (7)	43.8% (7)	12.5% (2)	16
	Suburban	56.3% (9)	31.3% (5)	12.5% (2)	16
	Urban	42.9% (3)	57.1% (4)	0.0% (0)	7
Total		19	16	4	39

This crosstabulation was designed to examine if offering 21st CCLC ETPD differed among geographical locations. This crosstabulation involved Question 2 from the Technology Usage Section and Question 6 of the Demographics Section. *Suburban* site directors (56.3%) had the highest percentage of reporting that they offered 21st CCLC ETPD. The *rural* directors (43.8%) were second, followed by *urban* directors (42.9%).

Table I9
Crosstabulation of 21st CCLC ETPD Models and Site Location(s) for Directors in Sites with 21st CCLC ETPD

ETPD MODELS	RURAL	SUBURBAN	URBAN	TOTAL
Partnering with college/university	11.8% (2)	**31.3% (5)**	28.6% (2)	9
Summer Institutes	11.8% (2)	**25.0% (4)**	14.3% (1)	7
Vendor/commercial training by outside consultants	**35.3% (6)**	25.0% (4)	28.6% (1)	11
Video, CD, or online tutorial	**35.3% (6)**	18.8% (3)	14.3% (1)	10
Workshops/Conferences	**41.2% (7)**	37.5% (6)	28.6% (2)	15
Teachers train other teachers	29.4% (5)	**43.8% (7)**	28.6% (2)	14
Director training of the afterschool teachers	35.3% (6)	37.5% (6)	**42.9% (3)**	15
Training by a professional institute or organization	17.6% (3)	**25.0% (4)**	14.3% (1)	8
21st CCLC regional training	35.3% (6)	**43.8% (7)**	28.6% (2)	15

Directors in sites with 21st CCLC ETPD were asked to identify the models of ETPD that their site(s) participated in for Question 1 of the Current 21st CCLC ETPD Users Section. In Question 6 of the Demographics Section, the directors were asked to provide their zip code, in order for me to determine their geographic setting. Table I9 compares the responses.

Suburban directors in sites with 21st CCLC ETPD had the highest percentages for EPTD model usage in five of the nine categories: *partnering with college/university*, *summer institutes, teachers train other teachers, training by a professional institute or organization*, and *21st CCLC regional training*. Rural *directors in sites with 21st CCLC ETPD* had the highest percentages with three models: *vendor/commercial training by outside consultants*; *video, CD, or online tutorial*, and *workshops/conferences*. Urban *directors in sites with 21st CCLC* had the highest percentage for *director training of the afterschool teachers.*

Table I10

Crosstabulation of 21st CCLC Software ETPD and Site Location(s) for Directors in Sites with 21st CCLC ETPD

SOFTWARE ETPD	RURAL	SUBURBAN	URBAN	TOTAL
Simulations/Virtual Environments	5.9% (1)	**6.3% (1)**	0.0% (0)	2
Reference materials (e.g. online encyclopedias)	23.5% (4)	**37.5% (6)**	28.6% (2)	12
Presentation software (e.g. Powerpoint)	29.4% (5)	37.5% (6)	**42.9% (3)**	14
Graphic printing software (e.g. Printshop)	**23.5% (4)**	12.5% (2)	14.3% (1)	7
Math programs	29.4% (5)	**56.3% (9)**	42.9% (3)	17
Science programs	17.6% (3)	**37.5% (6)**	28.6% (2)	11
English/Reading programs	41.2% (7)	**50.0% (8)**	28.6% (2)	17
Foreign language programs	0.0% (0)	**18.8% (3)**	0.0% (0)	3
Business education programs	0.0% (0)	**12.5% (2)**	0.0% (0)	2
CAD-CAM, Industrial arts programs	**47.1% (8)**	43.8% (7)	14.3% (1)	16
Historical websites	23.5% (4)	18.8% (3)	**28.6% (2)**	9
Test Preparation	41.2% (7)	**50.0% (8)**	42.9% (3)	18
Word Processing/Spreadsheet/Database	23.5% (4)	**50.0% (8)**	14.3% (1)	13
Email	**29.4% (5)**	25.0% (4)	14.3% (1)	10

(table continues)

SOFTWARE ETPD	RURAL	SUBURBAN	URBAN	TOTAL
Website development	**17.6% (3)**	6.3% (1)	0.0% (0)	4
Music creation software	**5.9% (1)**	0.0% (0)	0.0% (0)	1

This crosstabulation was designed to examine if offering 21st CCLC software ETPD differed among geographical locations for *directors in sites with 21st CCLC ETPD.* *Directors in sites with 21st CCLC ETPD* were asked to identify the types of ETPD software/programs that their site(s) used in Question 2 of the Current 21st CCLC ETPD Users Section. In Question 6 of the Demographics Section, the directors were asked to provide their zip code, in order for me to determine their geographic setting. Table I10 compares the responses.

Suburban directors in sites with 21st CCLC ETPD reported the highest percentages in EPTD software usage in the highest number of categories (nine of the 16 categories): *simulations/virtual environments, reference materials, math programs, science programs, English/reading programs, foreign language programs, business education programs, test preparation, and word processing/spreadsheet/database.* Directors in *rural* sites had the highest percentages in five of the categories. Directors in *urban* sites had the highest percentages in two categories.

Table I11
Crosstabulation of 21st CCLC Resource ETPD and Site Location(s) for Directors in Sites with 21st CCLC ETPD

RESOURCE ETPD	RURAL	SUBURBAN	URBAN	TOTAL
Graphing Calculators	5.9% (1)	**31.3% (5)**	0.0% (0)	6
GPS Equipment	5.9% (1)	**12.5% (2)**	0.0% (0)	3
Digital camera/camcorder	17.6% (3)	**31.3% (5)**	28.6% (2)	10
Smartboards and/or Promethean Boards	23.5% (4)	**37.5% (6)**	14.3% (1)	11
PalmPilots or other portable writing devices	0.0% (0)	**6.3% (1)**	0.0% (0)	1
Teleconferencing equipment	11.8% (2)	12.5% (2)	**28.6% (2)**	**6**
Learning with cell phones	0.0% (0)	**12.5% (2)**	0% (0)	2
Wireless networks	17.6% (3)	**31.3% (5)**	28.6% (2)	10

This crosstabulation was designed to examine if offering 21st CCLC resource ETPD differed among geographical locations for *directors in sites with 21st CCLC ETPD*. *Directors in sites with 21st CCLC ETPD* were asked to identify whether they had ETPD on certain resources in Question 3 of the Current 21st CCLC ETPD Users Section. In Question 6 of the Demographics Section, the directors were asked to provide their zip code, in order for me to determine their geographic setting. Table I11 compares the responses.

Suburban directors in sites with 21st CCLC ETPD had the highest percentages in resource EPTD in the most categories (seven of the eight categories). Directors in *urban* sites had the highest percentage in one category.

Table I12

Crosstabulation of 21st CCLC ETPD Characteristics and Site Location(s) for Directors in Sites with 21st CCLC ETPD

ETPD CHARACTERISTICS	RURAL	SUBURBAN	URBAN	TOTAL
EPTD was related to subject area content.	47.1% (8)	**56.3% (9)**	42.9% (3)	20
EPTD was appropriate to teachers' varying levels of knowledge.	41.2% (7)	**50.0% (8)**	28.6% (2)	17
EPTD was followed by planning time.	23.5% (4)	**31.3% (5)**	14.3% (1)	10
EPTD was accessible during school hours (substitutes provided for attendance).	11.8% (2)	**25.0% (4)**	0.0% (0)	6
EPTD was accessible during evening/weekend hours.	35.3% (6)	**37.5% (6)**	14.3% (1)	13
EPTD was planned or delivered with teacher input.	29.4% (5)	**43.8% (7)**	14.3% (1)	13
EPTD was focused on how technology can improve student learning.	35.3% (6)	**50.0% (8)**	42.9% (3)	17
EPTD was designed with collaborative practice sessions.	17.6% (3)	**25.0% (4)**	14.3% (1)	8

This crosstabulation was designed to examine if 21st CCLC ETPD characteristics differed among geographical locations for *directors in sites with 21st CCLC ETPD*. *Directors in sites with 21st CCLC ETPD* were asked to identify the characteristics of their ETPD in Question 4 of the Current 21st CCLC ETPD Users Section. In Question 6 of the

Demographics Section, the directors were asked to provide their zip code, in order for me to determine their geographic setting. Table I12 compares the responses. Directors in *suburban* sites had the highest percentages for EPTD characteristics in all eight of the categories.

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