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Implementing a one-to-one iPad program in a secondary school

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IMPLEMENTING A ONE-TO-ONE IPAD PROGRAM IN A SECONDARY SCHOOL

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Abstract

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University of Nebraska, 2013

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The purpose of this study was to identify and analyze the necessary data and use it to determine the degree of success of the implementation process used to initiate a 1:1 iPad program in a senior high school. Use of this data enabled the district to more effectively infuse the use of the iPad into the delivery of instruction designed to improve student achievement. This study utilized a developmental evaluation model to assess the implementation of the processes used as the 1:1 iPad initiative was designed and implemented. Developmental evaluation is a suitable evaluation model as it supports the process of innovation in ways that enable exploration and development. This model is also useful in innovative settings where goals are emerging and changing rather than predetermined and fixed, where time periods are fluid and forward-looking rather than artificially imposed by external deadlines, and where the purpose is learning, innovation, and change. Parents, students, teachers, and visiting school personnel were surveyed and interviewed to determine their perceptions related to the implementation process. Findings indicate that the perceptions of all the stakeholders were very positive regarding the success of the implementation of the 1:1 iPad program. Overall, each of the stakeholders believed that the program is good for student learning. Data analyses indicate that thorough and timely staff development was a key to getting the teachers to

utilize the technology in their classrooms. Student engagement and parental input were instrumental in the development and implementation of the 1:1 iPad program.

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Chapter 1

Introduction

In the spring of 1996, the Fort Calhoun Community School District was awarded an Excellence in Education Grant from the Nebraska Department of Education. The grant totaling $299,058 brought Fort Calhoun Community Schools to the front edge of educational technology. The grant gave Fort Calhoun students access to their educational data where they acquired skills to facilitate decision-making relative to their educational information and eventual career goals. This was accomplished through focused education and a partner relationship among students, parents, school personnel, and community through the use of an automated vehicle called the Individual Learning Plan (ILP). The grant funded a major upgrade in computers and helped create an ILP for every student. This grant award launched the Fort Calhoun school district into the cutting edge of technology overnight. That was 1996 and the district was flying high; it was focused more intently on individual student plans for success and used technology to map its future educational plan and eventual career plan.

Enter the era of No Child Left Behind. The No Child Left Behind (NCLB) Act of 2001 is a federal law to improve education for all children. “The No Child Left Behind Act codified accountability as our national educational blueprint, requiring schools to increase test scores incrementally so that all students are proficient in reading and math by 2014” (Booher-Jennings, 2006 p. 756). The NCLB act is based on four pillars of school improvement: accountability of results, school improvement based on best practice research, parental options, and local school control (US Department of Education, 2003, p. I). NCLB is a hallmark piece of legislation that instituted severe

sanctions for chronically under-performing school districts that did not meet Adequate Yearly Progress (AYP) (Dee & Jacobs, 2009). The NCLB accountability is based on a set of ascending opportunities for improvement for public schools that fail to meet Adequate Yearly Progress (AYP). When a district fails to meet AYP for two consecutive years, its first consequence is to be identified as a school needing improvement. "The consequences for being identified as a school needing improvement include giving the students an option to transfer. In subsequent years of being identified as not meeting AYP, districts face additional sanctions every year up to and including a complete restructuring of the school and replacement of most of the school's staff" (US Department of Education, 2003, p. 9). Fort Calhoun Community Schools found itself being identified as a school "needing improvement". In an *Omaha World-Herald* article from November 2002, a front-page headline read "Local Schools Identified as Schools in Need of Improvement". This article detailed the list of Omaha-area schools that were in need of improvement based on not meeting the NCLB criteria, and there in black and white was the name of Fort Calhoun Community Schools. This article sent a shockwave through both the school and community, establishing a need for immediate change.

John Kotter's (1995) first step in leading through the process of change is "establishing a sense of urgency" (p. 61). A leader must establish a crisis to cause employees to realize internal problems; he must eliminate false signs of security; set standards of achievement high enough that "business as usual" will not suffice (Kotter, 1995 p. 2). Being included on the list forced the Fort Calhoun school district to evaluate the ways in which it educated and assessed its students. In order for a district to exit from school improvement status, it must be identified as meeting all AYP standards for two

consecutive years (US Department of Education, 2006, p. 6). This journey to get off the list is a hard and long process that requires the school district to rethink the way it does business and to change its mode of operations to assure that all students can learn. For the next several years, the district emerged itself in the process of getting off the list and improving student learning. Through this time, the district was more concerned about NCLB and less concerned about staying on the cutting edge of technology. Shrinking resources were invested in curriculum and assessment training and materials and less and less in the area of technology. The once proud claim to fame "being on the cutting edge of technology" descended into a technological abyss that left Fort Calhoun Community Schools behind in 21st Century Skills and its kids at a disadvantage in the use of technology. The district had weathered the storm and brought student achievement up, but more and more students seemed disengaged with process of their education. Standards and assessments had driven its system for so long that the school needed to re-energize the way it educated students and increase its opportunities in a world driven by technology.

"As educators, our challenge is to match the needs of our learners to a world that is changing with great rapidity. To meet this challenge, we need to become strategic learners ourselves by deliberately expanding our perspectives and updating our approaches" (Jacobs, 2010, p.7). In the fall of 2010, I assumed the role of Superintendent for the Fort Calhoun Community Schools. This was a role that I aspired, as I felt that our district was entering a time of growth and fascinating change. I entered this new position armed with a forward-thinking Board of Education and progressive-minded administrative team. The Board of Education was keenly aware of the technological-

abyss our district had entered and was eager to propel out of that situation and into the 21st Century. During a Nebraska School Board Association meeting held in November 2010, two board members attended a presentation regarding school districts implementing a 1:1 computer model for high school students. This presentation ignited a flurry of conversation at the school's board meeting when the two board members returned to the next general session. That conversation spilled into the next board meeting and then into directive in which the administration was to investigate the possibility of a 1:1 program.

While this directive was amazing, it also was very daunting. The possibility of changing the way Fort Calhoun Community Schools delivered its curriculum and implementing a 1:1 program at our high school brought with it a myriad of challenges. The first challenge was to identify a group of people both within the district and beyond the district to act as a guiding coalition. A key to successful change is creating first, a guiding coalition and ultimately a critical number of people within the organization who will champion the change process together (Dufour & Eaker, 1998). This coalition included the superintendent, the secondary principal, the technology director, a tech-savvy secondary teacher, and the district's local Apple computer representative. After identifying the need to change and developing a critical mass for change, the next step in the process was establishing a clear vision for what the innovation would look like when implemented. Without vision, people lack a clear road map for where the change effort is headed and will wallow in uncertainty about what the change requires of them (Spady & Schwahn, 1998). To this end, Apple transported the district's team to Chicago in April 2011 to see the power of the iPad at work in the Chicago Public Schools. The team was

able to witness the power of the technology in the hands of some of Chicago's most at-risk and lower-achieving students. The visit was transforming and motivated the district's group to consider how they could gain staff buy-in for a 1:1 initiative.

While the board was ready for the district to implement the 1:1 initiative, the administrative team was cautious and wanted to avoid possible failure from a rushed implementation process. The school had been through a lot of changes with the advent of NCLB, and its staff needed a breather from systematic changes. A balance of sense of urgency with a thoughtful approach will help avoid failure in the process of change (Reeves, 2009). Following the trip, the guiding coalition along with the board put together what they thought was a reasonable timeline for the implementation of the 1:1 iPad program at our high school facility. The plan was to first grow the number of people within the steering committee to include some of the more technologically literate staff members and get the iPad in their hands. The next step was to arrange for training through both the Apple Corporation and the district's local Educational Service Unit (ESU). After a successful meeting with the select cohort, Fort Calhoun Schools issued iPads to the remainder of the secondary staff in spring of 2011 and set up a summer training program to insure teachers would have an understanding for and comfortableness with using the iPad within their classroom.

The next step in the process was to launch a pilot project in the fall of 2011 with one grade-level of students. The district chose the junior class, as these students not only had common core teachers, but also had teachers who were tech-savvy and equipped for implementing the 1:1 program. If at the end of the Fall 2011 semester the school determined that the pilot program had been successful in enhancing student learning, it

would launch it school wide, grades 9-12. In Kotter's (1995) theory of change, he spoke of gaining short-term wins; moreover, the district felt if the pilot was successful, that would give it a short-term win and help propel the program to the next level which was full 9-12 grade implementation.

School wide implementation was only possible because of the device chosen. Similar to many schools, selecting iPads over laptops was about affordability and functionality. While laptop computers continue to drop in cost, they still ran hundreds of dollars more than many tablets (Quillen, 2012). The iPad had a combination of tools inside the tablet and also had the advantage of portability and long-lasting battery life that made it ideal for education (D'orio, 2011). Not only was the iPad versatile, but also the amount of educational applications was and is growing at a rapid pace. The iPad worked well with the district's existing computer systems, and many of its applications were similar to the ones already utilized in its system.

Theoretical Frameworks

In an age of accountability in education, school districts were constantly being scrutinized when they undertake progressive initiatives. The cost of pursuing a 1:1 initiative was high, and there were many different stakeholders demanding accountability both for the dollars spent and the effect on student achievement. Students' learning and satisfaction with programs tended to be a focus of evaluation (Kezar, 1999). When a district was in the process of implementing an initiative, program evaluation was a necessary tool for justification. One area where research on evaluation was more prevalent was new experiences, including first year programs (Kezar, 1999). The purpose of evaluation from the accountability perspective was to measure outcomes, cost-

effectiveness, and efficiency (Stepney & Rostila, 2011). While this kind of evaluation was helpful in the world of education, it did not allow for a school district to learn as it goes using relevant data. Evaluations from the developmental perspective aimed at promoting the capacity of organizations to use knowledge wisely and respond appropriately as a learning organization to changing needs and circumstances. This perspective was much more inline with the needs of Fort Calhoun Community Schools while it was in the infancy of this 1:1 program. Developmental evaluations were particularly well suited to examining innovative programs in their earliest stages of development (Fagen, 2011).

Another attraction for the use of developmental evaluation was that it was generally conducted by a person within the organization as opposed to the use of an outside evaluator. Outside evaluators were often perceived by teachers as judgmental and controlling. In contrast, internal school-based evaluations aimed to be seen as a developmental process contributing to improved teacher and student learning (Livingston & McCall, 2005). The infusion of a Professional Learning Community into the district several years ago had built a level of trust between the teaching staff and the administration. It was this trust that helped it carry out a full developmental evaluation, which had benefited and will continue to benefit the growth of the 1:1 program within the district

Purpose

The purpose of this study was to identify the data and analyze the degree of success of which the Fort Calhoun Community Schools implemented the 1:1 iPad

initiative. Use of this data enabled the district to more effectively infuse the use of the iPad into the delivery of instruction to improve student achievement.

Research Questions

The following research questions were used to analyze the overall effectiveness of the implementation of the Fort Calhoun Community School's 1:1 iPad initiative:

Overarching Question #1: What was the teacher's perception regarding the implementation of the 1:1 iPad initiative?

1.1 What was the percent of the teachers who believed the 1:1 program was good for student learning?

1.2 Did the teachers at Fort Calhoun believe they had enough professional training to make the 1:1 initiative work?

1.3 What percent of teachers utilized the iPads in their daily lesson planning?

1.4 What percent of the teachers believed the implementation process was done in a reasonable timeline?

1.5 Was there adequate ongoing staff development to keep the teachers ahead of the students during the iPad implementation?

1.6 What percent of teachers believed that students were more engaged in their own learning progress because of the 1:1 iPad program?

1.7 What percent of teachers felt there were adequate rules and guidelines in place to keep students from misusing the iPads during school time?

1.8 What percent of teachers would recommend that other school districts utilize the 1:1 iPad program for student learning?

1.9 What suggestions did teachers have for school districts considering implementing the iPad program?

Overarching Question #2: Were the perceptions regarding the implementation of the iPad initiative different based on years of experience?

2.1 Was the perception of the teachers who believe the 1:1 program was effective for student learning correlated with years of teaching experience?

2.2 Was the perception of whether they received adequate professional training for implementation of the 1:1 initiative correlated with years of teaching experience?

2.3 Was the percentage that teachers utilized their iPad in their daily lesson planning correlated with years of teaching experience?

2.4 Was the percentage of teachers who believed there was a reasonable timeline for the implementation of the 1:1 program correlated with years of teaching experience?

2.5 Was the feeling that the teachers received ongoing staff development to keep them ahead of their students correlated with years of teaching experience?

2.6 Was the percentage of teachers who believed students are more engaged in their own learning because the iPad program correlated with years of teaching experience?

2.7 Was the percentage of teachers who believed there were adequate rules and guidelines in place to keep students from misusing their iPads during school time correlated with years of teaching experience?

2.8 Was the percentage of teachers that would recommend that other schools utilize the 1:1 iPad program for student learning correlated with years of teaching experience?

Overarching Question #3: What were the students' perceptions regarding the implementation of the 1:1 iPad initiative?

3.1 What percent of the students believe that their skills improved with the implementation of the iPad program?

3.2 Do the students believe the teachers are incorporating the iPad into their instruction on a regular basis?

3.3 Do the students perceive the classes as more engaging because of the use? of the iPad in the deliverance of instruction?

3.4 Do the students feel they learn more with the iPads?

Overarching Question #4: What were the parents' perceptions regarding the implementation of the 1:1 iPad initiative?

4.1 Do parents see their student using their iPad at home in an educational way?

4.2 What percent of time do parents see their student using their iPad in an academic versus non-academic way?

4.3 Do parents believe the iPad is helping their students learn?

4.4 Do parents believe the iPad is helping prepare their student for the future?

Overarching Question #5: What were the visiting school districts' perceptions regarding the implementation of the 1:1 iPad initiative?

5.1 Do the school districts that attended Fort Calhoun's iPad presentation feel the presentation helped them in their process of deciding whether or not to implement a 1:1 initiative?

5.2 Did Fort Calhoun's iPad program presentation help visiting schools decide which technology device, tablet or laptop, is best suited best for their own program?

5.3 Which group of presenters, students or staff, was more influential in the decision of whether or not to implement a 1:1 program within their own districts?

5.4 Did the group of staff members in attendance at one of these presentations feel as if Fort Calhoun had implemented their program adequately?

Definition of Terms

The following terms will be used consistently throughout the study:

Individual Learning Plan (ILP): This is a plan for each student that sequentially lays out the student's course of study throughout high school and then beyond into a possible career plan.

No Child Left Behind (NCLB): Public law 107-110, the No Child Left Behind Amendments to the Elementary Education Act of 1964 was signed into law by President George W. Bush on January 8, 2002. This federal statute allows parents to choose other public schools or take advantage of free tutoring if their child attends a school that needs improvement. Parents may also choose another public school if the school their child attends is labeled unsafe. Finally, the law also supports the growth of more independent charter schools, funds some services for children in private schools, and provides certain protections for home schooling parents.

Adequate Yearly Progress (AYP): It is an annual check of identified data elements to determine whether or not schools are meeting progress goals set by the State.

1:1: 1:1 denotes that there is one technological device for every one child.

Developmental Evaluation: An evaluation that targets measuring the understanding of the activities of a program operating in dynamic, novel environments with complex interactions.

Assumptions

The conclusions formulated from this study are dependent upon the following assumptions:

1. The questions in the survey were comprehensible to collect accurate data from the subjects.
2. Sufficient time had passed since the iPads had been implemented to give valid representation of the effectiveness of the implementation process.
3. A large enough percentage of respondents from each group participated to give an accurate representation of the overall effectiveness of the implementation.

Limitations

1. Only the Fort Calhoun 1:1 iPad program will be included in this study.
2. The 1:1 initiative has only been in existence for two years.
3. This study will be subject to the weaknesses inherent in survey research.

Delimitations

1. The boundaries of this study will include the use of the developmental model only.
2. A portion of this study will be completed via the use of surveys.

Significance of the Study

Student engagement has been a battle field that districts have tried to conquer for years. If meeting students in their world of technology engages them more readily in the process of their own education, then districts are on their way to a more relevant way of teaching youth. The data collected in this evaluation will be used to create a model of implementation for the Fort Calhoun Community Schools in future school improvement initiatives. The data could also serve as a study for other school districts as they look to integrate technology into their learning process and curriculum.

Organization of the Study

A review of literature is presented in Chapter Two. The review provides some literature on 1:1 computer programs, a history of implementation strategies, the importance of district leadership, the use of effective staff development, and the idea of collaboration for student success. In Chapter Three, the researcher discusses the use of Developmental Evaluation as the study design. The researcher also identifies the population of the study, selection of the measurement tools, collection of the data, and analysis procedures. In Chapter Four, the researcher presents the specific research findings for each of the research questions, as well as sub questions posed by the study. Chapter Five will include conclusions and recommendations for future technological projects for the Fort Calhoun Community Schools and other school districts working to implement 1:1 computer initiatives or other school improvement programs.

Chapter 2

Review of Literature

History

The first computers can be dated back to the early 1900s; history books report that the first true all-purpose computer was unveiled in 1946 as the Electronic Numerical Integrator and Computer. This computer was 30-tons and as big as two semis (Golden, 1999). Through the process of time and innovation, computers went from filling a room to sitting on a desktop. These innovations opened the door to computers being placed in schools. Computer usage in schools in 1983 was 125 students to 1 computer; that ratio shrunk to 4 students to 1 computer in 2002, and this is where it largely remains (Bebell & Kay, 2010). In 2000 there were approximately 1000 American schools that used a 1:1 model of computing (Dunleavy, Dextert, & Heinecket, 2007). In 2003-2004, it was estimated that 4% of the nation's school districts implemented 1:1 computing and that percentage grew to 25% by 2006 (Bebell & Kay, 2010). In addition, Bebell & Kay (2010) predicted that by 2011, nearly 50% of school districts across the nation will have likely purchased a computing device for each student in their district. This rapid growth of 1:1 programs and the promise it holds for student growth have the rest of the school districts around the nation exploring this latest reform effort. Advocates of the 1:1 program agree that it has the potential to increase (Papert 1980, 1993; Stager 1995, Brown 2003; Dunleavy, Dextert, & Heinecket, 2007).

In summary, in a relatively short time, the development of computers has changed the face of education. The ratios of student to computer increased from 125:1 in 1983 to the emerging trend of 1:1.

A Case for 1:1

"Many educators and policy makers believe that technology can be a catalyst for educational reform" (Crichton, Pegler, & White, 2012, p. 23). Thirty years ago, Seymour Papert, an educational theorist, suggested that providing students with powerful technologies could and would change the nature of how students actually think and retain information (Bebell & Kay, 2010). "Never before have students' lives outside the school been so different from their lives inside the classroom" (Lent, 2012, p. 11). Lent (2012) goes on to say that students seldom choose to use pencil and paper methods over the use of technology as they deal with solving classroom assignments. The days of teachers unitasking and relying on old methods like worksheets and other pencil paper assignments need to change to better ways of teaching students (Rosen, 2011). Children need to be prepared for the future, not the past, by being exposed to new technologies that they are going to use out in the world (Waters, 2010). The classroom computer is no longer confined to the desk; the new mobile devices have changed the way people access and work with information (Franklin, Sexton, Lu, & Ma, 2007). "As educators, our challenge is to match the needs of our learners to a world that is changing with great rapidity. To meet this challenge, we need to become strategic learners ourselves by deliberately expanding our perspectives and updating our approaches" (Jacobs, 2010, p.7). Norris & Soloway (2008) suggest that 30 students would not be given three pencils to learn to write, so why would four students be given one computer and be expected to take turns learning? For a technology to be truly useful, each child must have his or her own (Norris & Soloway, 2008).

If all teachers do is continue teaching the way they were taught, there will not be a change in student engagement and achievement (Hardy, 2011). One of the earliest findings emerging from 1:1 computing is the increase in student engagement. "The textbook alone or internet may be a necessary component, but the content alone is powerless without an engaged learner" (Lent, 2012, p. 14). Strong evidence suggests that 1:1 computing increased student engagement dramatically through increased exposure to the technology (Bebell & Kay, 2010). "Technology is all about engagement. Watching the intense looks on our children's and teen's faces as they play video games, text all day long, Skype, Facebook, watch YouTube videos, and juggle a dozen websites at a time, we can clearly see they are engaged' (Rosen, 2011, p.15). In a report from the PBS annual survey, digital resources stimulate student discussion and increase student motivation within a classroom (Lippincott & Grunwald, 2011). "Perhaps more significant and indicative of the future, each student had the ability to proceed through a series of learning tasks at his or her own pace in an engaging, but challenging laptop or web-based program" (Dunleavy, Dextert, & Heinecket, 2007). Evidence exists that when teachers change their instruction by utilizing technology, the students are more engaged and have more of a positive attitude toward learning (Gosmire, & Grady, 2007).

The movement to a 1:1 program has a significant impact on learning far past engagement. In a study conducted by Harvard Graduates, they observed the following:

> The 1:1 student to networked laptop ratio added value to the teaching and learning process by providing an increased: (i) ability to formatively assess learning; (ii) ability to individualize instruction; (iii) capacity for self-guided pacing; (iv) ability to access online resources; (v) capacity for student interaction and

> collaboration; and (vi) capacity for networked communication and materials management. (Dunleavy, Dextert, & Heinecket, 2007, p. 449)

Bebell & Kay (2010) found that 1:1 laptop initiatives have had several positive outcomes, including increased student engagement, decreased disciplinary problems, increased use of computers for writing analysis and research, and movement toward student-centered classrooms. A report from the Michigan 1:1 projects found that schools that have implemented 1:1 programs have higher student engagement, fewer suspensions and discipline problems, and some places, significant increases in math and science scores (McLester, 2011). Digital teaching platforms in a Texas school with a 1:1 program reported increased attendance, decreased discipline issues, and improved student learning (Greaves, 2010). In an article entitled "Got a Student Who Hates School? Give him an iPad," the author claims that by giving a troubled student an iPad, the student became hooked on learning, developed a desire to come to school, and increased his academic achievement and gained a positive attitude toward adults (Fingal, 2011).

The use of the 1:1 has not only shown boosts in engagement, attendance, and student motivation, but there have also been reports of students being prepared for the 21st Century workforce. "I can't help but believe that students who are textbook-tied to learning face disadvantages that are significant and long-lasting, especially in the 21st century where that are expected to work with others and approach problems creatively" (Lent, 2012, p. 174). Twenty-four/seven access to computers makes it possible for students to become fluent in the use of the technologies of the 21st century workplace (Pennuel, 2006). "When students use computers, it offers workplace-like situations that require independent, self-directed learning, thus preparing students with college and

career readiness skills" (Reiss, 2013, p. 61). Political leaders suggest that by providing students full access to powerful technologies, schools are significantly contributing to the nation's long-term economic prosperity (Bebell & Kay, 2010). "It's a moral imperative that we want our students to be able to find meaningful work and be contributing members of a global society, then we need to prepare them for the future, not our past" (Demski, 2012, p. 36).

In summary, research points to the fact that students who have 1:1 access to computers in the classroom have better attendance, are more engaged, show increased motivation, and are more prepared for the work-force.

Implementation

Schools need to establish conditions for teachers that encourage them to become facilitators and initiators of change (White & Myers, 2001). An important consideration about change in education is appreciating the complexity, sophistication, and subtlety of most of today's innovations (Hall, 2010). "States, districts, and schools have invested billions of dollars in hardware and software. It is time to realize technology can be a powerful change agent, but only if properly implemented" (Greaves, 2010, p.44). New skills are more likely to be applied in the classroom if teachers are used effectively in the implementation process (O'Shea, 2005). "Regardless of the potential promise of any technology innovation, specialized effort is needed for widespread and effective use" (Hall, 2010, p. 232). "When teachers at a school shared understandings about the use of the technology for learning and were supportive of technology integration, implementation was stronger at both the classroom and the student levels" (Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010, p. 44). "The implementation plan must be

familiar to everyone-and adaptable enough to reflect the situation" (Overbay, Mollette, & Vasu, 2011, p. 57-58). Studies of reform efforts have revealed that the level and quality of implementation largely determined the achievement of desired outcome (Berman & McLaughlin, 1978; Borman, Hewes, Overman, & Brown, 2003; Datnow, Borman, & Springfield, 2000; Fullan & Stieglbauer, 1991; Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010).

Technology implementation refers to the extent in which districts strategically approach deployment of new technologies (Bellamy, 2007). Effective implementation of the 1:1 projects requires a comprehensive or systemic approach that encompasses leadership and planning, supportive school culture, training and professional development, robust infrastructures and technical support, and access to digital content and instructional resources (Zucker 2005; Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010). Implementation factors require consideration for any perceived organizational changes, pre-assessments of training needed for staff, and an assessment of the new technology's capabilities (Bellamy, 2007). Shapley, Sheehan, Maloney, & Caranikas-Walker (2010) say that implementation success is associated with high levels of principal leadership, teacher's commitment, model developer support, and professional development. Features identified with successful implementation of technology include shared vision of the project, clearly defined goals, equal relationships among stakeholders, sufficient resources, involvement from top-level administration, and sufficient time to implement (Baker, 1994; Ely, 1999). Differences in implementation of technology use is directly linked to the collaboration between the teachers and the administration, the availability of professional development opportunities, and systemic

program support (Bebell & O'Dwyer, 2010). Technology management strategies include proper financial planning, clarity of the implementation plan, and an understanding by management regarding the use of the new technology (Bellamy, 2007). The most important key element in the implementation process is to guarantee strong support throughout the process (Donovan & Green, 2010).

"The allocation of time is one of the truest tests of what is really important in any organization" (DuFour & Eaker, 1998; pg 111). Time for adequate planning is identified as one of the main concerns in the implementation of new technology (White & Myers, 2001). The lack of a start-up period for planning can be a major barrier to effective implementation (Greaves, 2010). Adequate start-up time allows for proper implementation of a 1:1 program that includes insuring an adequate infrastructure for wireless technology, a robust plan for professional development, and a chance for teachers to pilot lessons with students (Shapely, Sheehan, Maloney, Caranikas-Walker, 2010). The inhibitors of implementing technology include lack of financial resources and the lack of time for adequate professional development (MacNeil & Delafield, 1998).

"The perceived climate of the organization may mediate the relationship among technology, the planning processes, and the perceived effectiveness of the deployment of technology (Bellamy, 2007). "All too often, new technological innovations have proven unusable to a wide variety of teachers, whether because the schools lack the capacity to implement them well, policies are not congruent with technology use, or the culture of the school is not supportive of the technology adoption" (Blumenfield, Fishman, Krajack, Marx, & Soloway, 2000; Penuel, 2006 p. 333).

In summary, the implementation of a 1:1 project will be more successful if the administration is supportive, there is adequate planning, the teachers believe in the program, and there is sufficient staff training

Staff Development

Effective professional development must not only affect the knowledge, attitudes, and practices of the district's staff, but it also must change the culture and structure of the organization in which the individuals work (Sparks & Hirsh, 1997). For successful implementation of a 1:1 program, principals need to plan for training that mixes direct instruction, mentoring and coaching, and sharing of best practices in a strong program of staff development (O'Donovan, 2009). "Professional development is essential to enhancing the skills of teachers, staff, and administrators" (Creighton, 2003). Key elements in a successful staff development program include offering a variety of options for training, emphasizing skill development, providing hands-on experiences, and giving teachers genuine examples of how to implement the new program into their day-to-day teaching (MacNeil & Delafield, 1998). A successful professional development program helps teachers acquire new skills and information that affect their daily roles in the classroom (O'Shea, 2005). Furthermore, it means providing occasions for teachers to reflect critically on their current practices and to fashion new knowledge and beliefs about content, pedagogy, and learners (Sparks & Hirsh, 1997). Effective professional development provides teachers opportunities to practice new skills and methods in a sheltered coached environment that resembles actual classroom learning (O'Shea, 2005). In addition, it allows teachers to participate in professional growth activities and practices with their peers, as well as see merit in programs that connect new pedagogical and

content knowledge to their current teaching responsibilities (Penuel, 2006; O'Shea, 2005). "Staff development becomes a means to an end rather than the end in itself; it helps educators close the gap between current practices and the practices needed to achieve the desired outcomes" (Sparks & Hirsh, 1997 p. 24).

"If you really want to see technology supporting quality instruction in the classroom, the data indicates we need to get serious about providing ongoing targeted staff development" (Pitler, 2011, p. 44). Research indicates that teachers do not make greater use of technology in their classrooms because they do not know how to integrate these tools with instruction and have not been given proper support to use technology on a daily basis (Lippincott & Grunwald, 2011). Before being called upon to integrate that new technology into their classroom, teachers need to be treated as learners first as new technology is introduced (Crichton, Pegler, & White, 2012). Intensive professional development is intended to build well designed and meaningful lessons with the integration of technology in every classroom (McPherson, Wizer, & Pierrel, 2006). Teachers need to be trained sufficiently so they have confidence in technology. The move to technological innovations within the classroom will require teachers to adapt new pedagogy (Donovan & Green, 2010). Faculty comfort, provided by effective professional development, is crucial as they prepare teachers to adequately implement technology into their classrooms to enhance teaching and learning (Donovan & Green, 2010). Simply dropping a laptop into the classroom does not change student learning and teacher instruction. When teachers are left with implementing technology without proper training and support, the implementation is doomed to fail (Reifsnyder, 2011). "A faculty that becomes comfortable with the ideas of technology will more easily integrate it into the

curriculum" (McNeil & Delafield, 1998 pg. 297). The more preparation a faculty has, the more likely they will be able to focus on the true impact of the technology integration rather than the self-concerns of preparedness (Donovan & Green, 2010). Staff development for teachers is key for a meaningful integration with technological devices in their classrooms so that they are comfortable and will use the device as a staple within their delivery of content knowledge (Puente, 2012). It is vital for teachers as they rework existing curricula and instructional practices to take advantage of what the mobile learning environment can offer (Norris & Soloway, 2008). Moreover, teacher training is essential for implementing technology into schools in a cost-effective and non-disruptive integration process (MacNeil & Delafield, 1998).

Gauging faculty readiness to participate in a 1:1 initiative is essential in the implementation process (Donovan & Green, 2010). "In order to create effective learning environments, teachers need opportunities to learn what instruction and assessment practices, curricular resources, and classroom management skills work best in a 1:1 student to computer classroom setting" (Dunleavy, Dextert, & Heinecket, 2007 p. 440). "As 1:1 programs become more popular, the quality and depth of preparation that teachers receive for implementation will become a central predictor of program success" (Bebell & O'Dwyer, 2010). Teachers must make massive investments of time and effort to adapt their teaching materials and practices to make the 1:1 environment effective and relevant (Bebell & Kay, 2010). "Formal professional development has been a critical component of large-scale and smaller 1:1 programs" (Penuel, 2006). The success of implementation of 1:1 programs depends largely on teacher preparation through well-planned staff development (Bebell & Kay, 2010). Studies show that the key to 1:1

implementation is to build a high-quality sustained professional development program that allows teachers to build basic technology skills as well as an understanding of how technology can be integrated into their curriculum (Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010). Professional development for 1:1 programs must include a long-term process that includes just-in-time practice and mentoring for staff members as they grow in their integration of technology in the classroom (Greaves, 2010). In the end if adequate professional development is not provided in implementing 1:1 programs; the technology selected becomes nothing more than a paperweight (Mclester, 2011).

In summary, proper staff development and training is crucial for the success of the 1:1 program. Teachers must be proficient in the use of the chosen form of technology and they must be instructed in how to integrate it into their pedagogy before they can effectively utilize it to teach students.

Leadership

Successful implementation of organizational change requires strong leadership at all levels to sustain the necessary energy to achieve a new vision and direction throughout a system (Conzemius & O'Neill, 2001). Good leaders first establish a learning organization built on trust and commitment and then move their people through change by being optimistic, creative, and leading with passion (Cash, 1997). Effective leaders go beyond declaring intent: they must turn aspirations into actions, they are impatient and driven by urgency and they recognize that the ultimate test for a leader is results (Ulrich, 1996; DuFour & Eaker, 1998). For instructional leaders to rally the staff toward improvement, they must encourage problem solving and deeper thinking skills and develop teachers as engaged learners to mobilize toward sustainable change (Fullan,

2002). Essential components for effective leaders include: pursuit of moral purpose, understand of the change process, relationship building, fostering knowledge building and striving for coherence (Fullan, 2001). Transformation happens when leaders communicate by utilizing passion, integrity, authenticity, and collaboration (Scott, 2002). Leadership creates the vital link between organizational effectiveness and people's performance by encouraging employees to work better and to improve their commitment and satisfaction (Jing & Avery, 2008).

Principals must create an environment that supports collaboration, provides time for professional development, and recognizes and celebrates teachers as leaders (Ash & Persall, 1999). Effective principals work relentlessly to improve achievement by focusing on quality, defining and promoting high expectations, and connecting directly with teachers and the classroom (Wallace Foundation, 2011). Furthermore, principals need to have the skills to be an instructional leader. These skill are interpersonal skills, planning skills, instructional observation skills, and skills in research and evaluation (Phillips, n.d.). Effective principals must be resource providers, serve as an instructional resource, be good communicators, and have a visible presence in the school (Jenkins, 2009). In addition, the principal must help faculty overcome fear and grapple with difficult problems (Ash & Persall, 1999). Leaders must be willing to stand up for effective practice even if changes are unpopular (Reaves, 2009). Leaders must be clarifiers and focusers and distinguish what is merely important and what is imperative (Schmoker, 2011). "Effective principals ensure that their schools allow both adults and children to put learning at the center of their daily activities" (Wallace Foundation, 2011 p. 6). Principals who see themselves as instructional leaders are most likely to create a learning

environment that is productive and satisfying for teachers and students (MacNeil & Delafield, 1998). "As instructional leaders, principals are responsible for facilitating teacher's integration of technology into the teaching and learning process" (Gosmire & Grady, 2007 p. 19). These administrators see what is vital and eliminate extraneous distractions that consume time and energy (Schmoker, 2006). School leaders draw their people together to recognize the pain of transition and move collectively toward sustainable change (Deal & Peterson, 1999).

Through the use of technology, principals are seeing technology as a relevant option for improving student engagement (Levin, 2011). Higher levels of technology implementation were associated with administrative leaders who set the direction for change by instituting supportive policies fostering collaboration (Shapely, Sheehan, Maloney, & Caranikas-Walker, 2010). The key element in school reform is the building principal whose role has changed over the course of time and demands skills in collaboration, shared decision making and an increased competency in technology (MacNeil & Delafield, 1998). Administrators must demonstrate leadership in emerging technology through involving staff in decisions, setting goals for the use of technology, developing and encouraging effective professional development, and providing resources and support for implementation (Shapely, Sheehan, Maloney, & Caranikas-Walker, 2010). "Any educator will tell you the most successful implementation of technology programs takes place in schools where the principal sees himself as a technology leader" (Demski, 2012, p. 49). "Principals who are comfortable with technology become models of technology use in their schools" (Human Capital, 2001, p. 9). Administrators who model the use of technology in their schools inspire innovation, whereas principals who

require the use of technology in the classroom impede the proper inclusion of technology in the classroom (Demski, 2012). Implementation of the 1:1 program is heavily associated with the strength of the administrator's leadership (BeBell & O'Dwyer, 2010).

Superintendents must model the use of technology, insure the infusion of the 21st Century skills, provide adequate infrastructure, and boost the use of professional development in the implementation of technology (Schachter, 2010). Top-management involvement with implementation and planning helped influence a climate where employees felt encouraged and challenged to implement new technologies (Bellamy, 2007). High level of implementation of technology was associated with leaders who set the direction for change, developed supportive policies, fostered collaboration and acquired resources for their districts (Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010).

In summary, in order for the 1:1 program to be successful, school administrators must provide tenacious leadership which is exhibited by fostering collaboration among the staff, being passionate about the possibilities the initiative provides, and modeling the use of technology.

Collaboration

"Collaboration is the process of developing interdependent relationships where all are focused on a common goal and where people rely on each other to achieve these goals" (Conzemius & O'Neill, 2001 p. 15-16). Collaboration means everyone participates in shared decision-making, communicating to each other because they are committed to improving knowledge and skills for the good of all involved (Ely, 1999). Productive teams engaged in collaborative, data-driven problem solving can provide the needed

impetus for working smarter through utilizing everyone's individual talents collectively to benefit the school (Ash & Persall, 1999). "In collaborative cultures, sharing and support create trust, feelings of collegiality and professionalism, greater capability, and continual improvement" (Fullan, 2004 p. 120).

In a collaborative approach, both leaders and teachers approach tasks of improvements as a meeting of equals, together trying to generate the best course of future actions (Glickman, 2002). It takes both teacher and the principal working collaboratively to change how technology is being used in the classroom as a part of a 1:1 program (Mclester, 20011). Collaboration is a powerful learning tool as teachers engage in cycles of self-responsible planning, action, change, and reflection/evaluation (Lent, 2012). Good leadership requires leaders to remove the barriers of sharing, create opportunities for sharing, and reward collaboration (Fullan, 2001). "Principals must build schools around collaborative teams that engage in a constant cycle of reflection, planning, experimentation, analysis of results, and adaptation" (DuFour & Eaker, 1998, p. 196). When administrators utilize the collective brainpower of their staff, there is allowance for team learning and collaborative problem solving; it is this collaboration that provides an effective and efficient vehicle for organizational change (Ash & Persall, 1999). "Only through collaborative inquiry and dialogue with our companions along the way can we achieve meaningful organizational growth" (Brown, Moffett, 1999 p. 106). Teachers are more likely to continue to use learned skills when they work together to sustain implementation efforts rather than working in isolation (O'Shea, 2005). In many schools today, teachers work in isolation without the opportunity to collaboratively solve problems, share information, learn together, and plan for continuous student achievement

(Ash & Persall, 1999). Collaboration can take many forms, but without defined specific measure and measurable adult actions, it is in vain (Reeves, 2009). Collaboration extends beyond the school's walls from staff and administration to the parents and community (Conzemius, O'Neill, 2001). "The concept that groups of people working together can be more productive than individuals working alone is receiving recognition as a critical element in most enterprises" (Ash & Persall, 1999 p. 10).

Technology initiatives are about people who learn to plan with, teach with and learn with the technology. These relationships are critical in the implementation of a new program (Overbay, Mollette, & Vasu, 2011). "The importance of faculty collaboration and support should not be overlooked as a successful component in the adoption of new technology" (White & Meyer, 2001, p. 99). For teachers to successfully deliver course material through mobile devices they need the collaborative efforts of administrators, teachers, and students (Wang, Shen, Novak, & Pan, 2009). For successful implementation of technology administrators must set clear goals and guidelines as teachers collaborate in learning sessions (Overbay, Mollette, & Vasu, 2011). Collaboration is at the heart of collegial cultures where teachers learn by seeing how other teachers implement technology (Shapley, Sheehan, Maloney, & Caranikas, 2010). Through collaboration, informal assistance from colleagues may advance implementation of technology through working with each other to solve technical problems and sharing ideas about inclusion of technology in lesson planning (Shapley, Sheehan, Maloney, & Caranikas, 2010). Bebell & O'Dwyer (2010) suggest that teachers who lack professional development in the form of teacher collaboration for 1:1 programs incur more obstacles for proper implementation. Collaboration among faculty during the implementation of

the 1:1 program appears to relieve some of the pressures as faculty focuses on new pedagogy (Donovan & Green, 2010). The use of technology teams to acquire and implement technology into the classroom creates a collaborative environment throughout the district that encourages students, teachers, administrators, parents, and the community to work together for the good of the district (Gosmire & Grady, 2007).

A leadership team made up of administrators, teachers, and students need to work collaboratively and evaluate the success of the 1:1 program through the lenses of curriculum and content; the lenses of the culture of the building; and the lenses of technical needs (O'Donovan, 2009). The use of technology in the classroom is a joint effort between teachers and students as they learn how to use the technology in a reciprocal environment (Bielefeldt, 2012). Small pilot programs for 1:1 initiatives need to allow teachers and students to work cooperatively to implement the technology into the classroom effectively and help serve as a product review team of the program (Davis, 2011).

Developing teachers to incorporate technology within their classroom requires districts to supply just-in-time support, training, and opportunities for teachers to cooperate for district-wide implementation success (Whipp, Wexler-Eckman, & van den Keiboom, 2005). Collaboration is a vital component of the implementation process. In working together with other educators, teachers are able to assimilate their colleagues' ideas as well as formulate their own action plans for use in their classrooms.

Research has demonstrated that the future of education lies in embracing the use of technology in the classroom. Students have been shown to be more engaged, have better attendance, and be more prepared for the work environment when they have 24

hour access to a computer. However, not all teachers are prepared to use technology as their primary method of instruction. In order to successfully implement a 1:1 iPad program, strong leadership from the administration is imperative as well as innovative staff training. "Respondents at higher implementing schools reported that committed leaders, thorough planning, teacher buy-in, preliminary professional development for teachers, and a commitment to the transformation of student learning were keys to their successful implementation of Technology Immersion." (Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010, p.46). By working together as a staff to bring technology to the forefront of the learning environment, schools can provide the best education possible.

Chapter 3

Methodology

Introduction

The purpose of this study is to identify the data and analyze the degree of success of which the Fort Calhoun Community Schools implemented the 1:1 iPad initiative. The use of this data will enable the district to implement school-wide initiatives in a more efficient and effective manner. This study uses developmental evaluation design. The research findings will be reported to the school board, administration, and district-wide instructional leaders group. The research findings will be used as a guide for further implementation of school-wide initiatives for district school improvement. Data related to this research was collected from various questionnaires completed by administrators, students, parents, and staff.

Research Design

In the 1940s, evaluation was the form of research and was defined as being the process of determining the extent to which objectives have been attained (Steele, 1970). "The term evaluation refers to the activity of systematically collecting, analyzing and reporting information that can be used to change attitude or improve the operation of a project or program" (Douglah, 1998, p. 1). Over the years, the concept of evaluation, like all practices, evolved; and in the 80s it was defined as a process by which organizations make value judgments about things and their cost effectiveness (Oliver, 2000). The type of research that is utilized through this study is program evaluation. "Program evaluation is the systematic collection of information about activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness

and/or inform decisions about future programming" (Patton, 2000, p. 426). Effective program evaluation is a systematic way to improve actions involving procedures that are feasible, ethical, and accurate (Nonprofit Development, INC, 2004). The institute also found that the common purpose for program evaluation is to determine if the magnitude of the investment matches the tasks to be accomplished. "Evaluation should contribute to the present program or to further and future programs" (Steele, 1970, p. 5).

Program evaluation continued to evolve from simply a formative or summative evaluative program into a Micheal Patton's Utilization Focused Evaluation (UFC) theory. "Utilization focused evaluations begins with the premise that evaluations should be judged by their utility and actual use; therefore, evaluators should facilitate the evaluation process and design evaluation with careful consideration of how everything is done, from the beginning to the end, will affect use" (Patton, 2000, p. 425). Utilization focused evaluation shifts the power away from the evaluator as an arbiter towards evaluation as a collaborative process of building mutual understanding (Oliver, 2000). The ever-changing landscape of education, which has now become more technologically driven, calls for further changes in the way evaluations are conducted. The school districts who utilize innovative technologies need an evaluation instrument that can be used as a barometer as they navigate uncharted territories. This evaluation designed to chart progress during implementation of innovative program has been labeled developmental evaluation.

This study utilizes the developmental evaluation to assess the implementation process used by the Fort Calhoun Community Schools as they developed their 1:1 iPad initiative. Developmental evaluation is the most suitable evaluation process as it supports

the process of innovation in ways that enable exploration and development (Gamble, 2008). “Developmental evaluation supports learning to inform action that makes a difference” (Patton, 2011, p.11). “Developmental evaluation is a way of being useful in innovative settings where goals are emerging and changing rather than predetermined and fixed, time periods are fluid and forward-looking rather than artificially imposed by external deadlines, and purpose is learning, innovation, and change rather than external evaluation” (Patton, 1994, p. 318). The Developmental evaluation is used as a guide as the district continues to study the implementation of the 1:1 program for student learning. Developmental evaluation is not driven by accountability to the decision makers, but rather internal accountability within the organization to develop the program as it may be envisioned and continues to evolve.

Within the Fort Calhoun Community Schools there are many stakeholders involved in this innovative program. Each one of these stakeholders has a different perspective of the evolution of the program, and all perspectives are valuable information as the district evaluates the success of the implementation process. Not only are there different perspectives among these diverse groups, there are also a variety of perspectives within the groups themselves. Students who are used to the paper and pencil type of education will differ from those who prefer and are more engaged with technology. Teachers who may have grown up with technology may differ from those experienced teachers who have had to adapt over the course of time. Parents concerned about the control and filtering of the devices may vary in their opinions of the success of the program. Developmental evaluation allows the initiative to be gauged as it changes with

time and with further development. Developmental evaluation process is designed to support the innovation within a context of uncertainty (Gamble, 2008).

Developmental evaluation is a form of the UFC model of evaluation and serves as the framework for gathering information to study the implementation of this innovation and breakdown the data that will be used to implement new and different programs. In the ever-changing landscape of education, implementation processes will be tested and measured for their effectiveness. Program success rate is determined by the effectiveness of the complete process of implementation, not if the majority of stakeholders are comfortable with how the innovation was implemented.

Population

The population for this study includes the secondary high school grade faculty at Fort Calhoun Community Schools, high school building administrators, high school grade parents, high school grade students who were directly involved with the 1:1 iPad program, as well as representatives of several school districts who attended demonstrations regarding Fort Calhoun's iPad program. The group of representatives from other school district include district administrators, building administrators, district faculty, and some Educational Service Unit #3 staff members.

Instrumentation

Developmental research questions must show a connection with the ideas, language, and framework of the innovators who are being worked with (Patton, 2011). The survey questions were developed by a group of people that included 3 members of the UNO faculty, the Fort Calhoun Technology Coordinator, and the Fort Calhoun Administrative team. The overarching questions were generated at a meeting of the

aforementioned group of people. The first researcher-designed questionnaire was administered to to the faculty and administration of the Fort Calhoun High School. A second researcher-designed questionnaire was given to the ninth through twelfth grade students who participated in the 1:1 iPad program. A third researcher-based questionnaire was given to the parents of the ninth through twelfth grade students. The last measure used in this evaluation was a phone interview conducted with representatives of the districts who attended presentations of the 1:1 iPad programs on the Fort Calhoun Community High School premises. The researcher was granted permission from the school district to use these survey instruments. The survey questionnaire centered on the following themes for the staff, students, and parents: (1) perception regarding the success of the program for student learning, (2) professional training, (3) implementation timeline, (4) amount of utilization of the iPads in daily lessons, and (5) adequacy of rules and guidelines. In these questionnaires, the researcher has included information regarding grade level, gender, years of experience, and positions to give a clearer picture of the whole implementation program.

The questions regarding perceived success of the iPad program were used to measure both engagement and perception of worth of the 1:1 program.

The questions regarding professional training refer to the adequacy of both start-up instruction and transitions into ongoing education as the implementation of the program develops.

The implementation timeline questions refer to the sequence activities and events that helped the district assure that the launch of the iPad initiative was successful.

The questions regarding the utilization of the iPads in the classroom will further clarify if the program was implemented school-wide by all teachers and if there were differences of the rate of implementation as it equates to years of teaching experience.

The questions regarding sufficiency of rules and guidelines were used to give the district a perception of how safe and secure the stakeholders felt the iPad program was for all students. These results will provide Fort Calhoun School District some much needed insight into how to provide the most effective protection through electronic internet filtering as well as writing new school policies for regulation.

Overarching questions #1, #3, and #4 are of the qualitative nature and will be analyzed using descriptive statistics. Overarching question #2 is also a qualitative question, but correlation statistics will be utilized to analyze its data. Overarching question #5 is comprised of open-ended questions that will convey further clarity to the success of the program. The last two questions are of the quantitative nature and pre/post-test analysis will be used to quantify these two pieces of data.

Data Collection

Data for the evaluation was collected in three ways. First, the researcher used data from questionnaires completed by the Fort Calhoun High School faculty and building level administrators, as well as Fort Calhoun High School students and their parents. The questionnaires for the Fort Calhoun faculty and administrators along with the parents were administered at the completion of the first full year; the questionnaires for the Fort Calhoun High School students were administered both pre- and post-implementation. Second, the researcher used data completed by visiting school districts via phone interviews with regards to their perception of the implementation of the 1:1 program. The

phone interviews for the visiting school districts were administered following their visits to Fort Calhoun Community School District. Third, data was collected by the researcher focusing on the student achievement and engagement (attendance) of the pilot class of 2013. The data from student achievement and engagement was collected following the completion of the class of 2013's senior year. Statistics used in the analysis include percentages, means, and ranges. Tables are used to present the data tabulated for the research questions.

Research Questions

Overarching Question #1: What are the teachers' perceptions regarding the implementation of the 1:1 iPad initiative?

1.1 What is the percent of the teachers who believe the 1:1 program is good for student learning?

1.2 Did the teachers at Fort Calhoun believe they have had enough professional training to make the 1:1 initiative work?

1.3 What percent of teachers utilize the iPads in their daily lesson planning?

1.4 What percent of the teachers believe the implementation process was done in a reasonable timeline?

1.5 Has there been adequate ongoing staff development to keep the teachers ahead of the students during the iPad implementation?

1.6 What percent of teachers believe that students are more engaged in their own learning progress because of the 1:1 iPad program?

1.7 What percent of teachers felt that at the time of the launch there were adequate rules and guidelines in place to keep students from misusing the iPads during school time?

1.8 What percent of teachers would recommend that other school districts utilize the 1:1 iPad program for student learning?

1.9 What suggestions would teachers have for school districts considering implementing the iPad program?

Overarching Question #2: Does the perception regarding the implementation of the iPad initiative differ based on years of experience?

2.1 Does the perception of the teachers who believe the 1:1 program is effective for student learning differ based on years of experience?

2.2 Does the perception of whether the teachers received adequate professional training for implementation of the 1:1 initiative differ based on years of experience?

2.3 Does the percentage of teachers who utilize the iPad in their daily lesson planning differ based on years of experience?

2.4 Does the percentage of teachers who believe there was a reasonable timeline for the implementation of the 1:1 program differ based on years of experience?

2.5 Does the feeling that the teachers received ongoing staff development to keep them ahead of their students differ based on years of experience?

2.6 Does the percentage of teachers who believe students are more engaged in their own learning because the iPad program differ based on years of experience?

2.7 Does the percentage of teachers who believe there are adequate rules and guidelines in place to keep students from misusing their iPads during school time differ based on years of experience?

2.8 Does the percentage of teachers who would recommend that other schools utilize the 1:1 iPad program for student learning differ based on years of experience?

Overarching Question #3: What are the students' perceptions regarding the implementation of the 1:1 iPad initiative?

3.1 What percent of the students believe that their skills improved with the implementation of the iPad program?

3.2 Do the students believe the teachers are incorporating the iPad into their instruction on a regular basis?

3.3 Do the students perceive the classes as more engaging because of the use of the iPad in the deliverance of instruction?

3.4 Do the students feel they learn more with the iPads?

Overarching Question #4: What are the parents' perceptions regarding the implementation of the 1:1 iPad initiative?

4.1 Do parents see their student using the iPad at home in an educational way?

4.2 What percent of time do parents see their student using the iPad in an academic versus non-academic way?

4.3 Do parents believe the iPad is helping their students learn?

4.4 Do parents believe the iPad is helping prepare their student for the future?

Overarching Question #5: What are the visiting school districts' perceptions regarding the implementation of the 1:1 iPad initiative?

5.1 Do the school districts that attended Fort Calhoun's iPad presentation feel the presentations helped them in their process of deciding whether or not to implement a 1:1 initiative?

5.2 Did Fort Calhoun's iPad program presentation help visiting schools decide which technology device, tablet or laptop, is best suited best for their own program?

5.3 Which group of presenters, students or staff, was more influential in the decision of whether or not to implement a 1:1 program within their own districts?

5.4 Did the group of staff members in attendance at one of these presentations feel as if Fort Calhoun had implemented its program adequately?

Data Analysis

Research Question 1.1 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the perception of the teacher's belief on whether or not the 1:1 iPad program was good for student learning.

Research Question 1.2 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the perception of the teacher's belief if the staff had enough professional training to make the 1:1 iPad initiative work.

Research Question 1.3 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of time the teachers utilized iPads in their daily lesson plans.

Research Question 1.4 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the perception of the teacher's belief on whether or not the staff had a reasonable timeline to implement the 1:1 program.

Research Question 1.5 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the perception of the teacher's belief on whether or not the faculty were given adequate ongoing staff development to keep them ahead of their students during the 1:1 implementation process.

Research Question 1.6 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the perception of the teacher's belief on whether or not the students are more engaged in their own learning progress because of the 1:1 iPad program.

Research Question 1.7 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of teachers who believed that their were adequate guidelines in place to keep the students from misusing the iPads during school hours.

Research Question 1.8 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of teachers who would recommend that other school districts utilize the 1:1 iPad program for student learning.

Information collected from open-ended Research Question 1.9 will be analyzed for a more in-depth evaluation of Fort Calhoun School District's implementation process.

Research Question 2.1 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the perception of the teacher's belief on whether or not the 1:1 iPad program was good for student learning and if a teachers years of experience was a differentiating factor.

Research Question 2.2 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the perception of the teacher's belief

if the staff had enough professional training to make the 1:1 iPad initiative work and if years of experience was a differentiating factor.

Research Question 2.3 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of time that the teachers utilized iPads in their daily lesson plans and if years of experience was a differentiating factor.

Research Question 2.4 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the perception of the teacher's belief as to whether or not the staff had a reasonable timeline to implement the 1:1 program and whether years of experience made a significant difference.

Research Question 2.5 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the perception of the teacher's belief on whether or not the faculty were given adequate ongoing staff development to keep them ahead of their students during the 1:1 implementation process and if years of experience was a differentiating factor.

Research Question 2.6 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the perception of the teacher's belief on whether or not the students are more engaged in their own learning progress because of the 1:1 iPad program and if years of experience was a differentiating factor.

Research Question 2.7 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of teachers who believed that there were adequate guidelines in place to keep the students from misusing the iPads during school hours and if years of experience was differentiating factor.

Research Question 2.8 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of teachers who would recommend that other school districts utilize the 1:1 iPad program for student learning and if years of experience was differentiating factor.

Research Question 3.1 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of students who believed that their skills improved with the implementation of the iPad program.

Research Question 3.2 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of students who believed that the teachers incorporated the iPad into their instruction on a regular basis.

Research Question 3.3 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of students who perceived that their classes were more engaging because of the use of the iPad in the delivery of instruction.

Research Question 3.4 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of students who believed they learned more because of the utilization of the iPads.

Research Question 4.1 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of parents who believed that the iPads helped students learn.

Research Question 4.2 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percent of time that parents

viewed their students using the iPad for academic purposes as opposed to non-academic purposes.

Research Question 4.3 was analyzed using information gathered from the surveys created by the UNO/Fort Calhoun team to measure the percentage of parents who believed that the iPads helped prepare their student for the future.

Research Question 5.1 was analyzed using information gathered from the interviews created by the Fort Calhoun administrative team to measure the percent of visiting school districts that felt the presentation helped them to decide on whether or not to implement the 1:1 initiative.

Research Question 5.2 was analyzed using information gathered from the interviews created by the Fort Calhoun administrative team to measure the percent of visiting school districts who felt the presentation helped them to decide on the whether the tablet or laptop was best fitted for their own 1:1 program.

Research Question 5.3 was analyzed using information gathered from the interviews created by the Fort Calhoun administrative team to measure whom the visiting school districts thought was more influential, students or staff presenters, as they decided on whether or not to implement the 1:1 program.

Research Question 5.4 was analyzed using information gathered from the interviews created by the Fort Calhoun administrative team to measure the percent of visiting school districts that felt the Fort Calhoun School district implemented their 1:1 program in an adequate manner.

Summary

The methodology used in this study includes primarily survey research comprised of questions concerning the implementation of the 1:1 iPad initiative in the Fort Calhoun Community Schools. The methodology is based on principles included in Michael Patton's Developmental Evaluation Theory. The Developmental Evaluation Theory is a fairly new process and useful when assessing innovative technological projects. The survey research was conducted using both a written survey and an interview system. The data was analyzed using percentiles, means and number of respondents. Information from this data research will be utilized as the district looks to implement new initiatives throughout the system. The findings of this evaluation will be available to the Fort Calhoun Community School stakeholders as well as interested surrounding school districts.

Chapter 4

Results

This study utilizes the developmental evaluation to assess the implementation process used by the Fort Calhoun Community Schools as they developed their 1:1 iPad initiative. Developmental evaluation is the most suitable evaluation process as it supports the process of innovation in ways that enable exploration and development (Gamble, 2008). "Developmental evaluation supports learning to inform action that makes a difference" (Patton, 2011, p.11). "Developmental evaluation is a way of being useful in innovative settings where goals are emerging and changing rather than predetermined and fixed, time periods are fluid and forward-looking rather than artificially imposed by external deadlines, and purpose is learning, innovation, and change rather than external evaluation" (Patton, 1994, p. 318).

The purpose of this study is to identify the data and analyze the degree of success of which the Fort Calhoun Community Schools implemented the 1:1 iPad initiative. The research findings will be reported to the school board, administration, and district-wide instructional leaders group and will be used as a guide for further implementation of school-wide initiatives for district school improvement. Data related to this research was collected from various questionnaires completed by administrators, students, parents, and staff.

Overarching Question #1: What are the teachers' perceptions regarding the implementation of the 1:1 iPad initiative? Response frequencies and percents are listed in Tables 1 and 2.

Research Question 1.1

What is the percent of the teachers who believe the 1:1 program is good for kids?

As see in Table 1, out of the 19 teachers responding to the survey, 18 teachers (94.7%) believed that the 1:1 iPad program was good for student learning. Only one teacher responded that the 1:1 iPad program is not good for student learning.

Research Question 1.2

Did the teachers at Fort Calhoun believe they have had enough professional training to make the 1:1 initiative work?

As see in Table 1, out of the 19 teachers responding to the survey, 17 teachers (89.5%) believed that they had adequate professional training to make the iPad initiative work in their classroom.

Research Question 1.3

What percent of teachers utilize the iPads in their daily lesson planning?

As see in Table 2, out of the 19 teachers responding to the survey, 16 teachers (84.2%) reported using the iPads in their daily lesson plans from some use to very frequent use. Only three teachers (15.8%) indicated that the iPads were used very little to none in developing daily lesson plans

Research Question 1.4

What percent of the teachers believe the implementation process was done in a reasonable timeline?

As see in Table 1, out of the 19 teachers responding to the survey, 17 teachers (89.5%) believed that the implementation process was completed in a reasonable timeline. Only two teachers stated that the implementation was not completed in a timely manner.

Research Question 1.5

Has there been adequate ongoing staff development to keep the teachers ahead of the students during the iPad implementation?

As see in Table 1, out of the 19 teachers responding to the survey, 13 teachers (68.4%) believed that there was adequate ongoing staff development to keep the teachers ahead of the students during the iPad implementation. Inadequate ongoing professional development was reported by six teachers.

Research Question 1.6

What percent of teachers believe that students are more engaged in their own learning progress because of the 1:1 iPad program?

As see in Table 1, out of the 19 teachers responding to the survey, 16 teachers (84.2%) believed that the students were more engaged in their own learning progress because of the 1:1 iPad program. Only three teachers reported that students were not more engaged as a result of the implementation of the iPad program.

Research Question 1.7

What percent of teachers felt that at the time of the launch there were adequate rules and guidelines in place to keep students from misusing the iPads during school time?

As see in Table 1, out of the 19 teachers responding to the survey, 100% of the teachers believed that there were adequate rules and guidelines in place to keep students from misusing the iPads during school time.

Research Question 1.8

What percent of teachers would recommend that other school districts utilize the 1:1 iPad program for student learning?

As see in Table 1, out of the 19 teachers responding to the survey, 100% of the teachers would recommend that other school districts utilize the 1:1 iPad program for student learning.

Research Question 1.9

What suggestions would teachers have for school districts considering implementing the iPad program?

Open ended questions, formal and informal conversations, and meetings with teachers were utilized to determine additional strengths and concerns related to the implementation of the 1:1 iPad program. These open ended questions and meetings allowed the teacher to share insightful information regarding their triumphs, concerns, and suggestions.

Triumphs:

- The staff appreciated having the iPads long before the students because it gave them a chance to get comfortable with the device and begin the process of using it in their area of expertise.
- Generating an excitement and buy-in to the program made the implementation process a little more palatable and engaged all stakeholders in the implementation process.
- The staff felt that running the pilot program with the grade level which had the most technologically savvy teachers was a key to the implementation of the project school-wide.
- Another key component to the success of the implementation was adequate time spent on staff development which was provided by both internal and external

experts who instructed teachers on how to infuse the technology into their classroom.

- The staff felt like the support given by the administration throughout the process eased the transition into a technological curriculum delivery method.

Concerns:

- The biggest concern coming from the teachers was the misuse of the iPad and the element of distraction it can cause.
- While 89.5% of the teachers felt like the timeline for the implementation of the 1:1 program was adequate, there were still teachers who felt they could have used more time to explore applications and for lesson planning to effectively infuse the technology into their classroom.
- The staff expressed concern over the capacity of the students to cheat in more clever ways.
- Another frustration the staff voiced was the lack of adequate technological support and the limitations of the iPad including its inability to interface with printers early in the implementation process.

Suggestions:

- Be sure that there are continuous opportunities for staff development, including tutorial programs for new teachers.
- Give the staff collaboration time throughout the school year to allow teachers opportunities to work together to share best practices.
- Consider using students as cohorts in the discovery of new ways of learning with the iPads.

Overarching Question #2: Were the perceptions regarding the implementation of the iPad initiative different based on years of experience?

Overarching Research Question # 2 analyzed teacher perception of the implementation of the iPad initiative based on the years of experience. This analysis used Pearson correlations to determine if years of experience play a role in the perception teachers have regarding the implementation of the 1:1 program. Correlations and significance levels are contained in Table 3.

Research Question 2.1

Does the perception of the teachers who believe the 1:1 program is effective for student learning differ based on years of experience?

As seen in Table 3, correlation of the data revealed no significant relationship between years of teaching experience and the beliefs about iPads being good for student learning, $r = -0.06$, $n = 19$, $p = .82$, two tails. Details of the correlation analysis are included in Table 1.

Research Question 2.2

Does the perception of whether the teachers received adequate professional training for implementation of the 1:1 initiative differ based on years of experience?

As seen in Table 3, correlation of the data revealed no significant relationship between years of teaching experience and the perception of whether teachers believed they received adequate training for the implementation of the 1:1 initiative, $r = -0.18$, $n = 19$, $p = .46$, two-tails. Details of the correlation analysis are included in Table 1.

Research Question 2.3

Does the percentage of teachers who utilize the iPad in their daily lesson planning differ based on years of experience?

As seen in Table 3, correlation of the data revealed no significant relationship between years of teaching experience and the percentage of teachers who utilize the iPad in their daily lesson plans, $r = +0.08$, $n = 19$, $p = .75$, two-tails. Details of the correlation analysis are included in Table 1.

Research Question 2.4

Does the percentage of teachers who believe there was a reasonable timeline for the implementation of the 1:1 program differ based on years of experience?

As seen in Table 3, correlation of the data revealed no significant relationship between years of teaching experience and the percentage of teachers who believed there a reasonable timeline for the implementation of the 1:1 program, $r = -0.18$, $n = 19$, $p = .46$, two tailed. Details of the correlation analysis are included in Table 1.

Research Question 2.5

Does the feeling that the teachers received ongoing staff development to keep them ahead of their students differ based on years of experience?

As seen in Table 3, correlation of the data revealed no significant relationship between years of teaching experience and the feeling that teachers received enough ongoing staff development to keep ahead of their students, $r = -0.10$, $n = 19$, $p = .70$, two tails. Details of the correlation analysis are included in Table 1.

Research Question 2.6

Does the percentage of teachers who believe students are more engaged in their own learning because the iPad program differ based on years of experience?

As seen in Table 3, correlation of the data revealed no significant relationship between years of teaching experience and the percentage of teachers that believed that students were more engaged in their own learning because of the implementation of the iPad program, $r = +0.11$, $n = 19$, $p = .69$, two-tails. Details of the correlation analysis are included in Table 1.

Research Question 2.7

Does the percentage of teachers who believe there are adequate rules and guidelines in place to keep students from misusing their iPads during school time differ based on years of experience?

As seen in Table 3, correlation of the data revealed no significant relationship between years of teaching experience and the percentage of teachers who believed that there were adequate rules and guidelines in place to keep students from misusing their iPads during school time, $r = +0.24$, $n = 19$, $p = .33$, two-tails. Details of the correlation analysis are included in Table 1.

Research Question 2.8

Does the percentage of teachers who would recommend that other schools utilize the 1:1 iPad program for student learning differ based on years of experience?

As seen in Table 3, correlation of the data revealed no significant relationship between years of teaching experience and the percentage of teachers who would recommend that other schools utilize the 1:1 iPad program for student learning, $r = +0.24$, $n = 19$, $p = .33$, two-tails. Details of the correlation analysis are included in Table 1.

Overarching Question #3: What were the students' perceptions regarding the implementation of the 1:1 iPad initiative?

Overarching Research Question 3 analyzed student's perception regarding the implementation of the 1:1 iPad initiative. This question was analyzed using surveys given to the students regarding their perceptions of their own learning as well as on how the teachers implemented the 1:1 program into their daily classroom activities. Student response frequencies and percents are listed in Table 4, Table 5, and Table 6.

Research Question 3.1

What percent of the students believe that their skills improved with the implementation of the iPad program?

As seen in Table 4, of the 195 students surveyed 124 (63.5%) of the students believed that their skills improved some to a lot because of the implementation of the 1:1 iPad program. No students reported that there was no improvement because of the implementation of the iPad program.

Research Question 3.2

Do the students believe the teachers are effective at helping them learn since the implementation of the iPad program?

As seen in Table 5, of the 195 students surveyed 122 (62.5%) of the students believed that their teachers have been effective to very effective in helping them learn since the implementation of the iPad program. Only two students (1.0%) reported that teachers were not effective in helping them learn since the implementation of the iPad program

Research Question 3.3

How frequently do you use the iPad technology in your classes?

Students were asked to report on the frequency of iPad use in a number of subjects. Table 6 displays the frequency of iPad use by subject area. Frequency of iPad use was reported

as often or very often over by over 80% of the students in English, Business, Foreign Language, and Social Studies. However, iPad use was reported often or very often by less than 40% of the students in Art and Mathematics. Table 2 displays student perceptions of frequency of iPad use by selected subject areas.

Research Question 3.4

Do the students feel they learn more with the iPads?

As seen in Table 4, of the 195 students surveyed 128 (65.6%) of the students believe that they learn some to a lot more with the use of the iPads. Only seven (3.6%) indicated that they learned no more with the use of the iPads.

As with the teachers, students were asked open ended questions to determine additional strengths and concerns related to the implementation of the 1:1 iPad program. This allowed the students the opportunity to share their perspectives regarding their triumphs and concerns regarding the implementation of the 1:1 program.

Triumphs

- The implementation of the iPad program has allowed for more creative and more hands on project-based learning.
- Improved organization including multi-tasking, planning, and note-taking is another benefit of the iPad.
- The iPad has helped improve grades and learning including acquiring more technology skills.

Concerns

- By far, the number one concern expressed by the students was that the iPad can be very distracting and that it really takes effort to be self-disciplined in its appropriate use.
- Students also expressed concern that the iPad allows for more ways of cheating with less effort.

Overarching Question #4: What were the parents' perceptions regarding the implementation of the 1:1 iPad initiative?

Overarching Question 4 analyzed the parents' perceptions of the implementation of the 1:1 iPad initiative. The survey was given to all parents of students in grades 9 through 12 and that had students involved in the program. Grade level specifics were used to see if there was correlation between students, staff, and parents. Survey results for parent responses are listed in Table 7 and Table 8.

Research Question 4.1

Do parents see their student using the iPad at home in an educational way?

As seen in Table 7, of the 59 parents surveyed, 71.2% reported somewhat to a lot that their student was using the iPad in an educational way. Only 2 (3.4%) of the parents reported seeing their student using the iPads not at all in an educational way.

Research Question 4.2

What percent of time do parents see their student using the iPad in an academic versus non-academic way?

Of the 59 parent surveys returned, 49 (83.1%) of the parents believed that their student used the iPad for some academic purpose. None of the parents reported that the iPad was used only for non-academic purposes.

Research Question 4.3

Do parents believe the iPad is helping their students learn?

As seen in Table 8, of the 59 parent surveys returned, 91.5% of the parents believed that the iPads were helping their students learned. Only 3 (5.1%) of the parents believed it was not helping their student learn. Two parents did not respond to this question.

Research Question 4.4

Do parents believe the iPad is helping prepare their student for the future?

As seen in Table 8, of the 59 parent surveys returned, 56 (94.9%) of the parents believed that the iPad program was preparing their student for the future. None of the parents believed that the iPad program was not preparing their student for the future. Three parents did not respond to this question.

While the survey questions supplied this research project with great data, the open-ended questions allowed the Parents to share their perspectives regarding their triumphs and concerns regarding the implementation of the 1:1 program. Parents also were given the opportunity to offer suggestions about future use of the iPad program.

Triumphs

- The parents commented that it was great for learning because it helped their students become more engaged.
- Parents appreciated that the iPad program prepared their students for the future world of work.

Concerns

- Some parents expressed concern that the device was being used more for entertainment than for learning.

Suggestions

- Due to the success at the high school, it was suggested that the administration consider implementing the 1:1 iPad program into the Junior High.
- Some parents felt it would be beneficial to assist the students in learning more applications.
- Another comment was to require that the device be left at school so parents do not have to patrol the device.

Overarching Question #5: What are the visiting school districts' perceptions regarding the implementation of the 1:1 iPad initiative?

Overarching Question 5 analyzed the visiting school district's perception regarding the implementation of the 1:1 initiative. Surveys were given to a representative of each of the school district who sent a team to presentations conducted by the students, staff, and administration of the Fort Calhoun Community Schools. Survey results for the visiting districts are listed in Table 9, Table 10, and Table 11.

Research Question 5.1

Do the school districts that attended Fort Calhoun's iPad presentation feel the presentations helped them in their process of deciding whether or not to implement a 1:1 initiative?

As seen in Table 9, of the nine visiting school districts, six (66.6%) of the district felt that the representation was somewhat to a lot helpful in their process of deciding whether or not to implement a 1:1 computer initiative.

Research Question 5.2

Did Fort Calhoun's iPad program presentation help visiting schools decide which technology device, tablet or laptop, is best suited best for their own program?

As seen in Table 9, of the nine visiting school districts, seven (77.8%) of the districts reported that attending our presentation helped them decide which technology device, tablet or laptop, is best suited for their own program.

Research Question 5.3

Which group of presenters, students or staff, was more influential in the decision of whether or not to implement a 1:1 program within their own districts?

As seen in table 10, of the nine visiting school districts, six (66.7%) of the districts stated that the students were the most influential in the presentation of the implementation process. Three (33.3%) stated that the teachers were more influential when presenting information about the implementation process.

Research Question 5.4

Did the group of staff members in attendance at one of these presentations feel as if Fort Calhoun had implemented its program adequately?

As seen in table 11, of the nine visiting school districts, six (66.7%) of the school districts felt like the Fort Calhoun Community Schools implemented the 1:1 iPad program adequately.

Table 1

Teacher Perceptions Related to the 1:1 iPad Implementation

Survey Question	Yes *n* (%)	No *n* (%)
Do you believe the 1:1 iPad program has been good for student learning?	18 (94.7%)	1 (5.3%)
Did you feel that you had enough professional training to make the 1:1 initiative work?	17 (89.5%)	2 (10.5%)
Do you believe the implementation process was done in a reasonable timeline?	17 (89.5%)	2 (10.5%)
Has there been adequate ongoing staff development for you to keep ahead of the students during the iPad implementation?	13 (68.4)	6 (31.5%)
Do you believe that students are more engaged in their own learning progress because of the 1:1 iPad program?	16 (84.2%)	3 (15.8%)
Did you feel that there were adequate rules and guidelines in place to keep students from misusing the iPads during school time?	19 (100%)	0 (0%)
Would you recommend that other school districts utilize the 1:1 iPad program for student learning?	19 (100%)	0 (0%)

Table 2

Percent of iPad Use Reported by Teachers in Their Daily Lesson Planning

	Never Use *n* (%)	Infrequent Use *n* (%)	Some Use *n* (%)	Somewhat Frequent Use *n* (%)	Very Frequent Use *n* (%)
What percent of your daily lesson plans included the use of the iPad in the process?	2 (10.5%)	1 (5.3%)	5 (26.3%)	3 (15.8%)	8 (42.1%)

Table 3

Correlations Between Teacher Perceptions and Years of Experience

	Years	
Teacher Perceptions	*r*	*p*(two-tailed)
iPads are Effective for Student Learning	+0.57	.82
Adequate Professional Development Has been Provided	-0.18	.46
Use of iPads in Daily Lessons	+0.08	.75
iPads Were Implemented in a Timely Manner	-0.18	.46
Ongoing Professional Development Was Made Available	-0.10	.70
Believe that Students are More Engaged in Their Own Learning	+0.11	.69
Adequate Rules and Guidelines are in Place for Student Use of iPads	+0.24	.33
Would Recommend that Other Schools Implement 1:1 iPad Programs	+0.24	.33

Table 4

Student Perceptions of Related to the 1:1 iPad Implementation

	None *n* (%)	A Little *n* (%)	Some *n* (%)	A Lot *n* (%)
Did your skills improve with the use of the iPad?	0 (0%)	71 (36.4%)	112 (57.4%)	12 (6.1%)
Did you learn more with the iPads?	0 (0%)	60 (30.8%)	94 (48.2%)	34 (17.4%)

Table 5

Student Perceptions of Teacher Effectiveness

	Not Effective *n* (%)	Somewhat Not Effective *n* (%)	Somewhat Effective *n* (%)	Very Effective *n* (%)
Were teachers effective at helping you learn since the implementation of the iPad program?	18 (9.2%)	53 (27.2%)	81 (41.5%)	41 (21.0%)

Table 6

Student Reported Frequency of iPad use in Selected Classes

Class	*n*	*Never n (%)*	*Seldom n (%)*	*Often n (%)*	*Very Often n (%)*
Art	84	2 (2.4%)	56 (66.7%)	19 (22.6%)	7(8.3%)
English	195	0 (0%)	2 (1.0%)	71(36.4%)	122 (62.6%)
Business	75	3 (4.0%)	6 (8.0%)	31 (41.3%)	35 (46.7%)
Foreign Language	122	2 (1.6%)	20 (16.4%)	47 (38.5%)	53 (43.4%)
Mathematics	190	16 (8.4%)	83 (43.7%)	63 (33.2%)	28 (14.7%)
Music	99	27 (27.3%)	68 (68.7%)	2 (2.0%)	2 (2.0%)
Science	180	6 (3.3%)	48 (26.7%)	83 (46.1%)	43 (23.9%)
Social Studies	151	1 (0.7%)	16 (10.6%)	73 (48.3%)	61 (40.4%)

Table 7

Parents Perceptions of iPad Use by Students in an Educational Way

	No Use *n* (%)	Little Use *n* (%)	Some Use *n* (%)	Somewhat Frequent Use *n* (%)	Very Frequent Use *n* (%)
Do parents see their student using the iPad at home in an educational way?	2 (3.4%)	6 (10.2%)	9 (15.3%)	16 (27.1%)	26 (44.1%)
Amount of time parents see their student using the iPad in an academic versus non-academic way?	0 (0%)	10 (16.9%)	28 (47.5%)	16 (27.1%)	5 (8.5%)

Table 8

Parent Perceptions Related to the 1:1 iPad Implementation

Survey Question	Yes *n* (%)	No *n* (%)
Do you believe the 1:1 iPad program is helping students learn? *	54 (91.5%)	3 (5.1%)
Do you believe the implementation process helps prepare students for the future? **	56 (94.9%)	0 (0%)

* Two Parents did not respond to this question
** Three Parents did not respond to this question

Table 9

Visiting Districts' Perceptions Related to Helping Them Make Decisions in Their Own Districts

	No Help *n* (%)	Very Little Help *n* (%)	Little Help *n* (%)	Somewhat Helpful *n* (%)	Very Helpful *n* (%)
Do the school districts that attended Fort Calhoun's iPad presentation feel the presentations helped them in their process of deciding whether or not to implement a 1:1 initiative?	2 (22.2%)	0 (0%)	1 (11.1%)	4 (44.4%)	2 (22.2%)
Did Fort Calhoun's iPad program presentation help visiting schools decide which technology device, tablet or laptop, is best suited best for their own program?	1 (11.1%)	0 (0%)	1 (11.1%)	5 (55.6%)	2 (22.2%)

Table 10

Most Influential in Helping to Make an Implementation Decision

Survey Question	Students *n* (%)	Staff *n* (%)
Which group of presenters, students or staff, was more influential in the decision of whether or not to implement a 1:1 program within their own districts?	6 (66.7%)	3 (33.3%)

Table 11

Visiting Districts Perceptions of Adequacy of Implementation

Survey Question	Yes *n* (%)	No *n* (%)
Did the group of staff members in attendance at one of these presentations feel as if Fort Calhoun had implemented its program adequately?	6 (66.7%)	3 (33.3%)

Chapter 5

Conclusions

Conclusions

The data collected from this research project revealed that the implementation of the 1:1 iPad program was a very successful initiative. All the stakeholders surveyed for this research, students, parents, staff and visiting school districts collectively perceived that the implementation process was very efficient and benefited from the support of all entities. The key components for a successful implementation, strong leadership, adequate and timely staff development, teacher buy-in and collaboration were all strategically planned for in this implementation process. Bebell and O'Dwyer (2010) linked the success of technology immersion programs, such as our 1:1 program, with the buy-in of teacher and administration, professional development opportunities and other available systemic program supports.

The perceptions of the students, staff, parents and visiting school districts all combined to verify that the implementation of the 1:1 iPad initiative was a successful endeavor. The success of this implementation will serve as a road map for our district as well as for others as we forged forward into the infusion of 21st Century Skills within the learning environment. The completion of this study provides the district with many significant findings.

Teacher Perceptions:

- Overall the teachers believed that the 1:1 iPad program was good for student learning and therefore utilized its use in the majority of their lesson plans.

- The teachers felt that the professional development was adequate and implemented on a realistic time line.
- A majority of the teachers believed that iPad rules and guidelines were adequate and helped create an environment where students were more engaged in their own learning.
- One of the more surprising findings was that there was no significant difference in the perception of the success of the implementation of the 1:1 program based on years of teaching experience.

As Jacobs states, meeting the needs of students in this ever changing world is a critical responsibility. This will require our willingness to become active learners ourselves (Jacobs, 2010). Teachers in our district have risen to this challenge, and believe the timeliness and quality of the professional development were appropriate. Teachers also recognized the value this technology has in motivating and engaging students. Appropriate and meaningful use of technology is an excellent way to ensure student. As found by Rosen, the amount of time students today spend on video games, Facebook, and other forms of technology is an apparent sign the technology can serve as a tool to foster student engagement (Rosen, 2011). Teachers reported that the district provided the necessary support, training, and time to work collaboratively, which have been identified as keys to ensure district-wide implementation success (Whipp, Wexler-Eckman, & van den Keiboom, 2005).

Student Perceptions:

- A majority of the students believed that they learned more with the use of the iPad and that it improved their overall skills.

- The students believed that the teachers were more effective in helping them learn since the implementation of the 1:1 iPad program.
- The students reported that the Fine Art classes utilized the iPads the least of all of their classes.

Students' responses reflect what much of the research states related to engagement, attendance, and motivation. They also indicated the value of this technology as a learning tool and as a way of becoming more prepared for the future. The 1:1 iPad initiative gave students an advantage that textbook driven curriculum and instruction can't. It also gave them unique opportunities to work collaboratively with others and approach problems creatively, which has been identified as a 21st Century workforce skill (Lent, 2012). This initiative also gave students to have twenty-four/seven access to computers, which also helps students become fluent in the use of the technologies of the 21st century workplace (Pennuel, 2006).

Parent Perceptions:

- The parents observed that their students were using their iPads in an educational way a majority of the time.
- An overwhelming amount of parents believed that iPads were good for student learning and were helping their student prepare for the future.

Parents belief that this initiative is important in preparing students for the future reinforces research by Bebell and Kay (2010), who suggest that providing students full access to powerful technologies helps students prepare for a technology rich future, and helps schools significantly contribute to the nation's long-term economic prosperity.

Visiting School Perceptions:

- The visiting schools that attended a presentation by Ft. Calhoun Community Schools believed that the presentation was helpful in deciding on whether or not to implement a 1:1 program and also aided in choosing the proper device for this program.
- A majority of the visiting schools believed that the 1:1 iPad initiative was implemented successfully in the Fort Calhoun School district.
- The visiting districts felt like the students were more influential than the staff in selling the program during the presentation.

Visiting districts not only helped teachers and leaders in our district make sound decisions during the implantation of this initiative, they also provided encouragement and suggestions in this implementation. Presenting to visiting districts helped teachers and leaders in our district reflect on those practices that encouraged problem solving and deeper thinking skills. The presentations also encouraged our teachers to reflect on ways this initiative can better engage their own students in meaningful problem solving activities. Presenting and discussing with others the change processes helped us focus on those aspects of the initiative that will help us maintain our momentum and will ultimately lead to sustainable change (Fullan, 2002). Representative from other districts helped us identify in ourselves those skills needed for effective leadership. They helped us understand the change process, the importance of relationship building, and the impact of knowledge building and coherence (Fullan, 2001).

Discussion

The perception of all the stakeholders was very positive regarding the success of the implementation of the 1:1 iPad program. Overall, each of the stakeholders believed

that the program was good for student learning. The perception that the program was implemented successfully supports the process in which the program was implemented. Thorough and timely staff development initiative and activities were keys to getting the teachers to utilize the technology in their classrooms. Student engagement helped drive the development because the students were constantly challenging the teachers' skills throughout the development of the program. The amount of parent training was essential in the implementation of the process because they were very positive in the role that the iPad played in their student's engagement. The Board of Education and the administration leadership in this initiative were key factors in the success of the program. The teachers could see that the board was actively involved because they supplied the resources needed to implement the program successfully. The Building Principal's role as the instruction leader was imperative to the success of the program because high expectations were set for the inclusion of the Ipad in the daily lesson plans of all teachers. The success of the program was reliant on all stakeholders working together to make the program effective.

As technology becomes much more pervasive in the world of education, it will be important that school districts utilize a well thought out implementation plan. Timely staff development needs to play a key role in this implementation process. Leadership at the building level needs to be well defined and must be present from the very beginning of the implementation process. Expectations for what a successful program might look like need to be developed early as to give a vision for what the fully implemented program might look like. Resources need to be allocated so that the process is not hindered because equipment is not available. It is vitally important that the technology

infrastructure is properly built before the program is launched. Another key to the successful implementation was the use of a pilot program in which only one class was selected to implement the program. The class chosen should be one that has potential to be successful and, if possible, the core teachers of that class need to be the more tech-savvy teachers.

This study was designed to measure the implementation of a 1:1 program. Future studies focused on student skill development as a result of 1:1 programs may be beneficial. This program was focused on high school aged students. Studies regarding the implementation in younger grades might be beneficial. Teacher technology aptitude studies might also be beneficial.

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