

Sponsoring Committee: Professor Fran Falk-Ross, Advisor
Professor Nancy Hale
Professor Bernice Houle

THE IMPACT OF AN EDUCATIONAL TECHNOLOGY FACILITATOR ON
TECHNOLOGY AND DIGITAL RESOURCE INTEGRATION: A CASE
STUDY OF THREE THINKFINITY DEMONSTRATION SCHOOLS

Jenny Concetta Sora

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

Background to the Problem

The growth of technology over the last 10 years has drastically changed the educational demands of the 21st century. Educational environments in which teachers and students use technology are no longer reflective of current standards (Lawless & Pellegrino, 2007). Because of this, schools need to ensure that the integration of technology is not only occurring, but occurs successfully to benefit both teachers and students. Misconceptions, beliefs, and lack of knowledge on the integration of technology in schools have often led to the failures of technology endeavors. Educational settings need to train teachers and to supply them with the time, knowledge, encouragement, and skills necessary to effectively integrate technology into the curriculum to facilitate meaningful learning (Ertmer & Ottenbreit-Leftwich, 2010).

Technology integration in schools can fail due to a lack of professional development, teacher knowledge, planning time, and technology assistance as well as teachers' existing beliefs systems (Ertmer & Ottenbreit-Leftwich, 2010; Lawless & Pellegrino, 2007). "To put it simply, effective teaching requires effective technology use" (Ertmer & Ottenbreit-Leftwich, 2010, p. 256), and

teachers' low-level uses of technology are not adequate to meet the needs of the 21st-century learner.

Even with the successful incorporation of technology, it may not be used to support the kinds of instruction believed to be most powerful. It is important for schools are to enable their teachers to effectively integrate technology in their instruction. Teachers need to understand how to use technology to create meaningful learning environments (Ertmer & Ottenbreit-Leftwich, 2010). When integrating technology into teaching, educators need to expand their knowledge of pedagogical practices and reconsider how they plan lessons, implement instruction, and evaluate themselves and their students.

In ETF Impact Study, the researcher evaluated the impact of an educational technology facilitator (ETF) based on his or her role and placement within three demonstration schools. The three schools were chosen based on the varying roles the ETFs played at each school which included a full-time onsite ETF, a part-time onsite ETF, and a part-time offsite (remote) ETF. Through a Thinkfinity grant application, the demonstration schools received technology tools to support learning, and web resources to enhance the teachers' curriculum. The demonstration schools also received technology training and professional development through the ETF, webinars, and other Thinkfinity resources. The integration of technology can be both challenging and rewarding for schools. The objective of this research was to evaluate if the role of an ETF impacted the integration of the technology tools and online resources.

Statement of the Problem

The use of technology and web resources to enhance student learning has been an area of research since the 1960s. With the growth of technology tools and their affordability, many schools are able to provide teachers and students with the opportunity to use computers on a daily basis. Aside from just technology tools, the expansion of the Internet and Web 2.0 tools have enabled teachers and students to gather a variety of resources and to participate in interactive sites, discussions, blogs, and more. According to the U.S. Department of Education, “technology is now considered by most educators and parents to be an integral part of providing a high-quality education” (2003, p. 3).

Though there is this growth in technology tools and a push to use them in education, there remain many barriers to the successful integration of technology. These barriers include “availability and access to computers, availability of curriculum materials, teachers’ beliefs, teachers’ technological and content knowledge, and technical, administration, and peer support” (Lowther, Inan, Strahl, & Ross, 2008, p.198). There exist a plethora of technology tools and web resources available to teachers and students, yet they often go unused due to high costs, a mandated curriculum, pressures of standardized testing, and lack of time and knowledge to obtain these resources. For example, some schools receive technology that goes wasted due to lack of professional development and teacher knowledge (Lawless & Pellegrino, 2007), whereas some teachers are hesitant to adopt curricular and/or instructional innovations (Ponticell, 2003). According to

Ertmer and Ottenbreit-Leftwich (2010), schools need to enable teachers to understand how to use technology to facilitate meaningful learning.

With the availability of technology tools and resources, it is important to prepare teachers to effectively integrate technology into their instructional practices (Lawless & Pellegrino, 2007). Unfortunately, despite the increase in these investments studies show that teachers use computers for preparation but not for instructional purposes. “Teachers use computers several times a week for preparation, but only once or twice a year for instructional purposes” (Groff & Mouza, 2008, p.22).

With the technology barriers and concerns, the federal government enacted the Enhancing Education through Technology (EETT) initiative. The main purpose of this initiative was to improve academic achievement through the use of technology in elementary and secondary schools. It was implemented to support students in becoming technologically literate by the end of the eighth grade. The EETT mandated schools to implement proven strategies for integrating technology into curricula and instruction, to support professional development activities to assist with technology integration, and to examine where technology can be used to increase student achievement and teacher performance through the availability of state-level grants (Lowther et al., 2008).

Verizon’s Thinkfinity Grant Program, a part of the ETF Impact Study, takes into account these strategies and provides schools with the opportunity to receive technology tools and to encourage the use of online resources to improve

academic achievement and teacher practices. These web resources align with state and national standards and cohere with the core curriculum. Thinkfinity offers professional development through webinars; an ETF who assists, demonstrates, and provides professional development to teachers; and content partners who assist educators with finding lessons that support their curriculum.

The ETF Impact study studied how the roles of the ETFs varied greatly in the three demonstration schools. The following school names have been changed to protect the schools' identities. Rupertville Magnet School had a full-time onsite dedicated ETF, Finch had an onsite part-time ETF who was also a full-time second grade teacher, and iTech High School had a remote (off-campus) ETF who assisted via emails and Skype. The purpose of this study was to identify how the role of the ETF impacted the integration of technology tools and resources. The researcher observed the technology integration process from September 2011 to June 2012.

Research Questions

The following research questions were used to guide this study. Each question was answered through an analysis of the three demonstration schools while the first two questions were answered through three cases studies. The third question is based on both qualitative and quantitative assessments and addresses the impact the ETF had on the implementation of the grant program.

Q1: To what extent have the teachers' integration of the Verizon Thinkfinity Grant Program impacted classroom instruction?

- How have teachers integrated the technological tools provided by the Thinkfinity funding into their classrooms?
- In what ways and to what degree, do teachers incorporate the Thinkfinity website elements (resources and Community) into their lesson plans?
- To what degree has the professional development provided by Verizon Thinkfinity's web-based site influenced teachers' use of tools and resources to support instruction?

Q2: To what degree have demonstration schools achieved goals as established within the Verizon Thinkfinity Grant Program?

- Goal 1: To what extent have the teachers demonstrated an increase in the use of technology tools and growth in resource integration using measures identified in their proposals?
- Goal 2: To what extent did the students demonstrate a measurable increase in engagement using measures identified in the schools' proposals?
- Goal 3: To what extent did the students demonstrate a measurable increase in achievement using measures identified in the schools' proposals?

Q3: To what extent did the ETFs' roles and routines impact the results of the integration of the Verizon Thinkfinity Grant Program in the three demonstration schools?

- To what degree was the ETF-directed professional development reflected in technology implementation in the classroom?

- To what degree did the ETFs' assistance, in and outside the classroom, impact technology integration in the classroom?
- To what degree did the ETFs encourage and enable the usage of the Thinkfinity content and resources in the classroom?

Key Terms and Definitions

The following section explains concepts and key terms found within the course of the study of the ETF Impact Study. These terms are used throughout this dissertation, and although they may be applied differently in other papers and research, it is important to clarify what they mean in this study.

Technology Tools

Thinkfinity provided the demonstration schools with technology requested in the grants. Prior to the year of study, schools already had certain technologies in place. For example, teachers at Finch used document cameras on a regular basis prior to the start of the study. Therefore, technology tools within a demonstration school not only apply to the technology they received from the grant, such as netbooks, interactive whiteboards, and iPads, but also the technology tools utilized within the schools before the grant. These included such things as desktop computers, laptops, netbooks, document cameras, iPads, interactive whiteboards, digital cameras, video conferencing tools, and wireless capabilities.

Education Technology Facilitator (ETF)

The ETF is a designated person who oversees the school's implementation of the entire Thinkfinity Grant Program. Depending on the schools' needs and budgets, the ETF role entailed either a dedicated full-time onsite ETF, part-time onsite ETF, or a remote (offsite) part-time ETF. According to Verizon Thinkfinity's document titled "ETF Role and Responsibilities" (Appendix I), the general roles of an ETF included the following: to develop year-long, measurable goals for the project that aligned with teacher and student usage of technology tools and resources; to encourage at least 70% of the teachers to use Thinkfinity resources and Community regularly; to provide professional development through training, coaching, modeling and supporting teachers both online and onsite; to collaborate and to communicate with other ETFs, Thinkfinity content partners, and the Thinkfinity professional development team to further project success; to consistently communicate about the project within the Thinkfinity Community; and to measure the success of outcomes based on the goals of the project. Although these were the general roles as defined by Verizon Thinkfinity, the expectations of the ETFs varied at each school, and their individual roles will be further discussed within each case study.

Thinkfinity Community

The Thinkfinity Community was a type of educational social network found within the Thinkfinity.org website. It was open to all educators, not just those participating in the Thinkfinity Grant Program. It encouraged users to share

ideas and to engage in online discussions with other professionals with common interests. The participants at the demonstration schools were encouraged to join the Community and to participate in discussions, to share ideas, to utilize the available resources and lessons, and to participate in online professional development. In general, a participant joined the Community by creating a username and password and completing a short profile. After participants created their accounts, they were provided with the opportunity to search, to save, and to organize resources and lessons; to participate and to share in discussions with educators and content specialists; and to create and to join social groups based on educational interests. A user does not need to join the Community to search for Thinkfinity lessons plans; however they did need to join in order to participate in discussions, save resources, and partake in online professional development and webinars.

Active and Passive Users

An active user is defined as an educator who utilizes the Thinkfinity Community and resources at least three times a week. Active users are members of the Thinkfinity Community who engage in weekly discussions via postings and responses. Passive users are those who use the online resources and observe discussions of others, but do not actively participate by posting their own ideas and questions.

Integration of Technology Tools

Each of the demonstration schools received a requested technology tool. Rupertville Elementary School received a cart of 30 netbooks, Finch K-8 Preparatory School received 24 interactive whiteboards, and iTech received 2 iPad carts with 30 laptops in each. The ETFs at each school provided assistance so that teachers could utilize the tools within their instruction and curriculum on a weekly or more basis. Depending on their roles, the ETFs provided various supports that encouraged the teachers to integrate tools.

Integration of Thinkfinity Resources

Aside from technology tools, each school was encouraged to incorporate the Thinkfinity website resources within their classroom instruction. The Thinkfinity resources include online lessons and interactives for students provided by 9 content partners affiliated with Thinkfinity. The Thinkfinity grant also provided each school with a content partner that assisted with the use of the resources. The assigned content partner provided assistance in using the online resources by posting lessons, answering Community questions, participating in webinars with teachers, and providing an onsite professional development. Though each school was assigned 1 content partner assigned to them, all three schools had access to all content partner's assistance, curriculum lessons and online interactives.

Demonstration Schools

Demonstration schools are the schools that were a part of the Thinkfinity Grant Program within the year studied for this dissertation. Working with a team, the researcher had the opportunity, through a funded grant program at Pace University, to evaluate the Thinkfinity Program at six elementary and high schools located across the country. Each school completed a grant application, requested specific technology and resources, and received those technologies within the year observed. The researcher observed the implementation of the grant over the 2011-2012 academic year. Though the researcher had the opportunity to observe the six schools, only three were used for the ETF Impact Study. The three were chosen based on the varying roles the ETFs held within each school. The following is the breakdown of the specific schools, the grant goals, and the ETFs' roles. The schools' names have been changed to protect their identities.

Rupertville Magnet School

Rupertville is located in Westchester, New York, and serves students in kindergarten through fifth grade. Although the researcher observed the schools and participants in 2011-2012, Rupertville had implemented the Thinkfinity program the previous 2010-2011 academic year. During the 2011-2012 observed year, Rupertville requested an ETF and a rolling netbook cart with 30 netbooks. The EFT was a full-time employee within the school, and was onsite every day to provide assistance.

Through the grant, the school funded the position of the dedicated ETF. The goals established in the Thinkfinity grant for Rupertville included an increase in the use of technology and digital content with a focus on K-2 literacy and 3-5 technology standards, a 75% increase in student engagement while using the netbooks for 1-1 learning, and a 50% increase in academic performance.

Finch K-8 Preparatory School

Finch is located in Long Beach, California and serves students from kindergarten through eighth grade. This was Finch's first year with Thinkfinity. Through their grant, they purchased interactive whiteboards for 24 classrooms. A willing teacher, involved in the grant application, took on the role of the ETF and assumed all the responsibilities expected of an ETF while continuing to work as a full-time second grade teacher. Though the ETF was onsite, he provided part-time assistance that took place mostly before and after school. Finch's goals included a 70% increase in use of technology and digital content with a focus on science and math, a 75% increase in student engagement with a focus on science and math class activities, and a 50% increase in academic performance.

iTech High School

iTech is located in Pomona, California and serves students from ninth to twelfth grade. This was iTech's first year with the Thinkfinity Grant Program. Through the grant, the school was provided with two mobile carts containing 30 iPads each and a remote ETF who assisted the teachers remotely via email, webinars, and the online Thinkfinity Community. The remote ETF visited the

school one time in January 2012 to provide a hands-on training course in using Thinkfinity resources. The goals stated in the grant for iTech included 75% increase in use of technology and digital content with a focus on project-based learning, an increase in student engagement through individualized learning their iPads, and 50% student increase in academic performance with a focus on student research.

Student Engagement and Achievement

Student engagement and achievement measures were intertwined within the grant goals and were therefore a part of the ETF Impact Study. Student engagement can be seen as the perspective teachers had when students were directly using the tools and or learning from the tools. Student engagement can also refer to the level of student involvement, participation, and on-task focus as assessed by the teacher, when using the online resources. Student achievement refers to the teacher's perspective on whether or not the technology tool and or resources increased student ability to achieve at a higher academic level. The schools did not provide data on engagement and achievement, and there were no pre- and post-tests conducted with students.

Significance of the Study

Technology literacy has become a required standard for all schools. The increase in electronic resources and technological devices in many schools require teachers to be prepared to integrate technology into their instructional practices (Lawless & Pellegrino, 2007). This study will contribute to a knowledge base on effective