

At Home with Technology:  
Home Educators' Perspectives on Teaching with Technology

By

©2018

Beverly Pell

M.Ed., Concordia University, Portland, 2013

B.A., California State University, Fullerton, 1992

Submitted to the graduate degree program in Educational Leadership and Policy Studies and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

---

Chair: Suzanne Rice, Ph.D.

---

John L. Rury, Ph.D.

---

Jennifer C. Ng, Ph.D.

---

Yong Zhao, Ph.D.

---

Steven H. White, Ph.D.

Date Defended: October 8, 2018

The dissertation committee for Beverly Pell certifies that this is the approved version of the following dissertation:

At Home with Technology:  
Home Educators' Perspectives on Teaching with Technology

---

Chairperson: Suzanne Rice, Ph.D.

Date approved: November 29, 2018

## Abstract

The purpose of this research was to understand how and why home educators are schooling their children using technology. First, I explore how home educators use technology for homeschooling. Second, I investigate how home educators see themselves as teachers when using technology. Several themes emerged from the data revealing that home educators believe technology enables them to provide high quality curriculum and individualized instruction and to create a constructive and engaging learning environment for their children. Data were collected by convenience sampling with a survey of 316 ( $N = 316$ ) home educators from 52 different territories, states, provinces, and countries across the globe, a nonrandom sample which is not representative of the entire homeschooling population. The quantitative data provide a specific picture of home education, reasons for homeschooling, and home educators' perceptions of technology use in their homeschool. Qualitative data were obtained through open-ended questions on the questionnaire and through thirteen in-depth interviews with home educators from the United States, Canada, and the United Kingdom. Data analysis was inductive, using a constant comparative methodology to identify meanings and values held by homeschool parents providing an important part of the overall picture. The data in this study show that home educators use technology to evaluate and purchase curriculum, to deliver and supplement instruction, to offer what they see as an appropriate and personalized education, and to gain social, emotional, and professional support from other homeschoolers. Results of this study suggest that using technology to access a wide variety of curricula, to connect with and support fellow teachers, and to provide individualized instruction in an engaging environment might lead to better educational experiences for numerous students and teachers.

## **Acknowledgments**

This dissertation would not have been completed without the help of my trusted, kind, wise and generous adviser, Dr. Suzanne Rice. I am grateful for her helpful direction and constant encouragement throughout the entire process. I would also like to thank Dr. John Rury for his patience and encouragement as he challenged me to improve this dissertation. Thank you also to Dr. Jennifer Ng whose practice and understanding of qualitative research is inspiring. Thank you to Dr. Yong Zhao and Dr. Steven White for their feedback and support during this endeavor. Thank you to all of the home educators who participated in this study, especially to the interviewees who willingly extended the conversation and kindheartedly shared their experiences with openness and honesty. Finally, thank you to my family. My husband's unending love and encouragement helped me keep going in the midst of hardship. My children's patience and understanding reminded me that I was going in the right direction. My mom and dad never tired of cheering me on. Thank you, God, for helping me finish this work. James 1:17.

## Table of Contents

Abstract.....	iii
Acknowledgments .....	iv
Table of Contents .....	v
List of Tables.....	viii
List of Figures .....	ix
Chapter 1 Introduction.....	10
Statement of the Problem.....	11
Context and Personal Interest.....	12
Conceptual Framework.....	12
Purpose of the Study.....	13
Significance of the Study.....	14
Research Questions.....	16
Chapter 2 Literature Review.....	16
Demographics.....	17
History.....	18
Legality .....	21
Democracy and Home Education.....	23
Technology and Education.....	26
Home Educators' Reasons For Homeschooling.....	28
Homeschooling Methods .....	31
Technology Use in Traditional Schools.....	32

The Evolution of Home Education .....	34
Chapter 3 Methods.....	35
Data Collection .....	35
Study Design .....	40
Methodology .....	41
Research Questions for Interviewees.....	43
Participant Collection Process.....	43
Data Analysis .....	53
Validity and Trustworthiness of Data.....	55
Ethical Issues.....	56
Limitations .....	57
Chapter 4 Results.....	57
Survey Results .....	57
Demographics.....	59
Reasons for Homeschooling.....	60
Home Educators' Views of Teaching With Technology .....	64
Most Satisfying Part of Using Technology.....	67
Challenges of Using Technology .....	69
How Technology Has Changed.....	70
Teenagers New to Homeschooling.....	73
Interview Results Converged With Survey Results.....	76
CATHERINE .....	78
MAGGIE.....	79

Independent Learning and Technology as a Tool .....	81
JULIA .....	81
ABIGAIL .....	83
Satisfying Aspects of Using Technology for Homeschooling .....	84
SYLVIA .....	85
DEANNA .....	86
Technology Use and Well-Being .....	87
ERIN .....	88
Social Networking, Support, and Resources .....	92
Providing an Engaging, Individualized Educational Experience .....	94
ROSE .....	94
Challenges and Frustrations With Technology .....	96
ANDREW .....	96
Home Educators' Further Thoughts .....	99
ANGELA .....	101
ANNE .....	101
JESSICA .....	103
Summary .....	106
Limitations .....	106
Chapter 5 Discussion .....	107
Summary .....	107
Interpretations .....	111
Suggestions for Future Research .....	115

Conclusion.....	117
References.....	120
Appendix A.....	136
IRB Approval Letter of Protocol.....	136
Appendix B.....	137
Letter of Consent.....	137
Appendix C.....	138
Survey Questions.....	138
Appendix D.....	144
States, Countries, Districts, and Provinces of Respondents.....	144

### **List of Tables**

Table 1. Snapshot View of Interviewees.....	46
Table 2. Interviewees’ Reasons for Homeschooling and Perceptions of Teaching with Technology.....	49
Table 3. Survey Demographics of Homeschool Parents.....	59
Table 4.1. Reason for homeschooling rank number 1.....	60
Table 4.2. Reason for homeschooling rank number 2.....	61
Table 4.3. Reason for homeschooling rank number 3.....	61
Table 4.4. Reasons for homeschooling ranked as 1, 2, or 3.....	62
Table 5. Additional Reasons for homeschooling.....	62
Table 6. Themes from data of the interviewees.....	63
Table 7. Testing the relationship between education level and technology use.....	75



## **List of Figures**

Figure 1. Survey data how home educators see themselves as teachers using technology. ....	65
Figure 2. How Interviewees see themselves as teachers using technology. ....	65
Figure 3. New home educators' perceptions of themselves as teachers homeschooling children in higher grades. ....	74

## Chapter 1 Introduction

In the 1980s educator and computer scientist Seymour Papert (1980; 1993) predicted that children would soon interact with computers in dynamic and meaningful ways. He also believed that computers could assist in unleashing children's creativity (Papert, 1985). He was right. Nearly four decades later we see teens, children, even toddlers, using computers for learning, for entertainment, for connecting with friends, and for reaching out to others around the world (Thompson, 2013). It is now common to see computers, iPads, and Chrome Books in school classrooms across the United States (Hunter, 2015; United States Department of Education, 2017). Whether this technology is used in ways that Papert predicted is not entirely known.

While the adoption of digital technology in public education has progressed at a sloth-like pace (Carr, 2011; Cuban, 2001; Snider, 1996; Tyack & Cuban, 1995), there is little knowledge of technology use in homeschools. Widely surveyed homeschoolers report using computers for teaching and learning (Andrade, 2008; Apple, 2010; Davis, 2014; Isenberg, 2007; Neil, Bonner, & Bonner, 2014; Ray, 2016; Snider, 1996), yet how and why they use technology has yet to be understood. Some researchers have categorized home educators among teacher leaders who readily use technology for instruction (Davis, 2014; Farris & Woodruff, 2000; Murphy, 2013; Ray, 2016; Snider, 1996). However, the literature is largely silent in respect to how parents perceive the benefits and challenges of using technology in a homeschool setting.

Researchers who study technology and homeschooling (Andrade, 2008; Bullock, 2011; Walters, 2015) believe a link exists between technology and the growth of the homeschooling phenomenon. However, absent from the literature are reasons why home educators teach with technology, and how they view technology use for homeschooling. My study is concerned with

how parents use technology for educational purposes and parents' perceptions of homeschooling in the digital age. Two main questions guide my study: How do home educators use technology for homeschooling? And how do home educators see themselves as teachers when using technology?

### **Statement of the Problem**

Homeschooling is now accepted as a legitimate form of alternative education (Bauman, 2002; Lois, 2013; Ray, 2016). It is unclear in the literature whether technology has influenced the growth of the homeschooling population. Furthermore, it is uncertain whether home educators are homeschooling, or considering homeschooling, because of the growing presence and availability of new technologies. It is unknown how technology influences home education, or whether technology plays a role in parents' reasons for keeping or removing their children from conventional schools.

Researchers (Andrade, 2008; Apple, 2000; Bullock, 2011; Ray, 2016) have investigated reasons behind the rise in home education over the last three decades, concluding that computers and technology may play some part in parents' choices whether to homeschool. Moreover, several have speculated (Apple, 2010; Isenberg, 2007; Walters, 2015) that the number of homeschoolers is increasing because of the support network technology offers to homeschooling parents. A study by Alias and Rahman (2013) led to the discovery that some of the technology-based learning activities used by homeschoolers improved the quality of education, curriculum content, and teaching.

Previous studies by the National Home Education Research Institute (NHERI) have produced data showing that over fifty percent of homeschool families surveyed believe they can do a better job of educating their children than the existing school system (Bauman, 2002).

However, the research does not define what “educating their children” means. In order to understand the underlying motivations, feelings, attitudes, and beliefs behind the statistics, qualitative data are necessary.

### **Context and Personal Interest**

My interest in educational technology and long-time experience with homeschooling made this study especially meaningful to me. In the year 2000, I began homeschooling my two daughters, ages 4 and 5 at that time. Both daughters graduated high school from our homeschool, named Veritas Academy, a registered private, non-accredited school in the state of Kansas. While several factors influenced my decision to homeschool, chief priority was a desire to provide a less structured learning environment to support imagination and creativity and to implement a classical, liberal arts education. I am a licensed and certified secondary educator. I have worked in public and private school settings teaching grades 8-12 since the early 1990s. It has been my experience that homeschooling is a special form of alternative education, most often involving significant sacrifice on the part of at least one parent.

The growth of online learning and virtual schools piqued my interest about homeschoolers and technology use. When I began homeschooling, nearly two decades ago, new technology was a desktop computer with dial-up Internet, CDs, Video Cassettes, and flip phones. Now, 21<sup>st</sup> century learning encompasses instant access to information via the Internet, the ease of social networking locally and globally, and portable computers, such as iPads and smart phones. The growth of new technology in education makes this study timely and appropriate for investigating a new generation of homeschoolers.

### **Conceptual Framework**

Albert Andrade (2008) conducted a qualitative study with 27 homeschool parents from

the Albany, New York region of the U.S., seeking to understand the relationship between modern technologies and the growth of home education in the United States (Andrade, 2008). Andrade investigated the underlying forces that might be influencing the growth of home education.

Andrade sought to explore if there was a relationship between computer use and the growth of homeschooling in the United States. The results of interviews, questionnaires, and focus groups revealed that participants believed computer technology empowered them to educate their children at home. Furthermore, Andrade discovered that participants were more confident to homeschool because the new technology provided informational, instructional and interpersonal support.

My study extends Andrade's research, ten years later, in exploring how technology is influencing home education. The study will uncover how home educators use the Internet, social media, devices such as iPads, notebooks, smart phones, and other technologies as part of homeschooling. I seek to extend and validate Andrade's findings that show how parents use technology and whether available technologies influence their reasons for homeschooling. Additionally, I will explore how home educators see themselves as teachers when using technology for homeschooling.

### **Purpose of the Study**

The purpose of this study is to better understand how parents use technology to homeschool their children and how parents see themselves as teachers when using technology in a homeschool environment. Why parents choose to homeschool their children and their perceptions of the benefits and challenges of using technology are also explored. While homeschooling has grown steadily over the past four decades (Ray, 2016), due to its dynamic

nature, researchers have yet to fully grasp how home educators teach their children and why they choose to do so. Newly gathered information will illuminate how parents homeschool with technology and may uncover how homeschooling has evolved in the digital age.

Quantitative studies of the homeschooling phenomenon are extensive and effective at describing homeschoolers as a whole but provide little information about the attitudes, practices, and methodologies of the individual homeschooling family. This study includes a questionnaire with 34 closed and open-ended questions, plus in-depth interviews with parents from different countries to paint a broader picture of homeschooling across the globe (see Appendix C, and Appendix D). This study will reveal how parents homeschool with technology, and provide an understanding of how they experience teaching, how it is meaningful to them, and how they interpret the experience of teaching with technology (Richards & Morse, 2012).

### **Significance of the Study**

Existing misconceptions and stereotypes about homeschoolers drift in and out of conversation (Farris & Woodruff, 2000; Ray, 2016). Insight into home educators and their practices is needed if such misperceptions are to be dispelled. Qualitative researchers, such as Richards and Morse (2012), have found that to observe, listen to what is said, and examine the words and their meanings is more effective in capturing attitudes, actions, and how participants view their situation than distributing a survey or brief questionnaire. Therefore, this study included a questionnaire constructed with text boxes allowing home educators to describe, in-depth and at length, experiences and viewpoints of how technology influences their teaching practices in a homeschool environment.

Isenberg (2007) used questionnaires to ask questions such as how many homeschoolers are in the United States, and why and how they homeschool. He found a wide range of responses

to the question of “*Why do you homeschool?*” Among the most popular answers were: to give a child better education at home, religious reasons, concern about the environment of other schools, and dissatisfaction with academic instruction at other schools. Furthermore, Isenberg’s research revealed that parents believe the Internet made homeschooling easier with the numerous materials available from online curriculum vendors, and better connections between homeschooling families.

Homeschooling laws vary from state to state. A difficulty in collecting accurate data about homeschoolers is that many states do not require parents to report that they are homeschooling (Bauman, 2002). Home education may be underreported in states that do not require parents to register their homeschool. For example, in Kansas homeschooling is not recognized by the Kansas State Department of Education (KSDE, 2018). However, parents are encouraged (though not required) to register their homeschool as a private, non-accredited school. Surveys may fail to reach a wide audience of homeschoolers and may therefore fail to capture the homeschooling population’s unique characteristics, personal experiences and comprehensive reasons behind practices.

Some teachers and families who work at or attend public schools are puzzled by, and curious to learn about, the reasons homeschool parents believe they can teach their children better than educators in conventional schools (Kunzman & Gaither, 2013). Some home educators believe that compulsory schools are not ready for 21<sup>st</sup> century learning. A study by Thieman (2008) revealed that although using technology may increase creativity and innovation it has done little to support critical thinking and problem solving in the classroom. While several studies have focused on parents’ motivations for homeschooling (Anthony & Burroughs, 2010; Apple, 2010; Isenberg, 2007; Ray, 2018), this original research will fill a gap in the literature by

uncovering parents' beliefs, attitudes, and perceptions of how homeschooling with technology influences teaching. The results will have implications for homeschooling families, for K-12 public school teachers who use technology in the classroom, for school administrators who encourage staff to use technology for teaching and for students who use technology for educational purposes.

### **Research Questions**

Two primary research questions formed the foundation for this descriptive study. Additionally, four sub-questions organized the path of the study and the data collected:

1. How do home educators use technology for homeschooling?
2. How do home educators see themselves as teachers when using technology?

Sub-questions that guided this study were:

- a. What are the reasons parents choose to home educate their children?
- b. What is most satisfying for parents when homeschooling with technology?
- c. What are some challenges of using technology in a homeschool environment?
- d. How has technology use changed in homeschools over the years?

## **Chapter 2 Literature Review**

This literature review will examine research related to home education and the influences technology has had on homeschooling. This chapter will provide an overview of the literature documenting relevant demographics, the history and legal status of homeschooling, democracy and education, the evolution of educational technology, parental reasons for homeschooling, homeschooling methods, and current research on technology use in home education.



## **Demographics**

According to homeschooling expert Dr. Brian Ray (2016), founder of the National Home Education Research Institute (NHERI), there are reportedly 2.3 million homeschooled students in the United States and nearly 3 million worldwide. Homeschooling in the U.S. went from a few thousand families in the 1970s to over two million families by the early 21<sup>st</sup> century, and homeschooling has continually grown at two percent to eight percent per year for the past decade (Ray, 2016). Although homeschooling is often restricted, and even illegal in some countries, according to the Home School Legal Defense Association (HSLDA), home education appears to be on the rise in the United States, Europe, and Canada (HSLDA, 2017). While Ray (2016) estimates that 93% of homeschooling families are Caucasian Christian conservatives, other studies show a growing number of secular homeschoolers, minority homeschooled students and several religious affiliations adding to the homeschool population (Coalition for Responsible Home Education, 2013). Research has shown that most homeschoolers are middle-class, and most have access to a home computer (Ray, 2016). Homeschooled students tend to score higher on the Scholastic Assessment Test than their public schooled peers (NHERI, 2018). For example, a recent study found that Black homeschooled students score somewhere between 23 and 42 percentile points above their Black public schooled peers (NHERI, 2018). Other research by Ray (2004) revealed that adults who were home educated are more likely to participate in local community service, be active voters and go to and succeed in college compared to the general population.

Several large studies have analyzed homeschooling as a social movement (Collom & Mitchell, 2005), studied motivations of homeschooling mothers, and investigated parents' reasons for homeschooling (Lines, 1999; Ray, 2016; Redford, Battle, & Bielick, 2016). In a

study of technology and its influence on homeschoolers, Albert Andrade (2008) found that parents believe access to and the use of modern technologies enhanced their ability to educate their children at home. Cambre and Hawks (2001) discovered that an increasing number of homeschool families are enrolling in online school programs and using distance-education as a way to increase learning experiences for their children. Many homeschool parents use computers to construct a personal educational environment (Andrade, 2008; Anthony & Burroughs, 2012), and homeschooled children often have more free time and opportunities to use the Internet than their public schooled peers. Several homeschooled children are encouraged by their parents to explore subjects that interest them. In a study of technology and homeschooling, Bullock (2011) found homeschoolers believe technology can “enhance their homeschooling program, provide the individualized curriculum parents seek and enable the students to work at their own pace in an environment which they deem as fun” (Bullock, 2011, p. 138).

## **History**

In the 1970s educator and school reformer, John Holt, led a movement against public schools, which he said focused too much on rote learning (Holt, 1982). He advised parents to pull their children out of the public school system, school them at home, and allow them to learn naturally according to their personal interests. The type of education Holt inspired was called “*unschooling*.” Unschooling is a child-centered approach to learning and is increasing in popularity among 21<sup>st</sup> century homeschoolers (Ricci, Laricchia & Desmaria, 2011; Rolstad & Kesson, 2013). Unschooling allows the child to explore and search for subjects of his interest. John Dewey, psychologist and perhaps the most influential American educational philosopher, did not suggest children explore their passions undirected without instruction (Dewey, 1938); but he described a shortcoming of American schools where teachers’ views were often overpowering

and dismissing of the intelligence of the child. Including the assessment of curriculum with top-down instruction, Dewey said that to subject a child's mind to "outside and ready-made material is a denial of the ideal of democracy, which roots itself ultimately in the principle of moral, self-directing individuality" (Dewey, 1903, p. 199).

Two home educators who unschool their children, Rolstad and Kesson (2013), added their story to the literature describing their experiences unschooling their children with new technology a generation apart. Their stories capture the capabilities that unschooling provides, mainly trusting their children and giving them freedom to learn in ways that are best for them. They concluded that the common experience of unschooling exists irrespective of changes in technology (Rolstad & Kesson, 2013).

By the mid 1980s, a new wave of homeschoolers surfaced. Many evangelical Christians, following the teachings and counsel of Bill Gothard in the 1960s, Raymond and Dorothy Moore in the 1970s, and later Focus on the Family in the 1980s, criticized public schools for teaching a secular worldview with a liberal agenda (Seelhoff, 2001). Thousands of parents withdrew their children from public schools and quickly became the majority of home educators in the United States. The Home School Legal Defense Association (HSLDA), a large legal counsel firm established in 1983, focused their efforts to legalize homeschooling. Today, HSLDA assists homeschooling families in many countries, encouraging home educators who are choosing to homeschool and providing legal support for homeschoolers all around the world (HSLDA, 2017).

Although many homeschoolers are Christian, other nonreligious parents who homeschool do so to meet their children's educational needs, rather than believing institutional schooling is essentially flawed or that they are called by God to shelter their children from the negative

influences of the world (Coalition for Responsible Home Education, 2013). Some scholars and policy makers argue that the state government should control homeschooling to ensure children are not abused behind closed doors (West, 2009). However, there is nothing in the literature to suggest a connection between the extent of state regulation and the rate of abuse or neglect among homeschoolers (Ray, 2018).

Continued growth in the number of homeschooling families may coincide with an increase in the number of websites and other resources that facilitate homeschooling. Twenty-five years ago, a family that wanted to homeschool would have limited curriculum and instructional options, chiefly little more than materials available at a local library. Researchers Lips and Feinberg (2008) found that homeschoolers now have numerous instructional options and networking available through hundreds of web sites on the Internet, providing free or low-cost curriculum. Moreover, there is a steep increase in virtual schools and distance learning programs for homeschoolers to use (HSLDA, 2017; Ray, 2016).

Which parent is responsible for home education in families is rarely discussed though women are often portrayed in literature as the primary homeschooling parent (Stambach & David, 2005). Apple (2013; 2010) notes that homeschooling is “largely women’s work” and that teaching children adds to the extensive responsibilities that mothers already have in the home. Apple posits that new technologies have played a part in not only saving time and effort for mothers who direct most of the childrearing and housekeeping decisions in the home, but has also given them a chance to obtain a higher “Godly” status as they creatively use technology to fulfill their homeschooling needs (Apple, 2010). Isenberg’s (2007) study of homeschoolers in the U.S. revealed that better educated mothers are more likely to homeschool young children than their less educated counterparts. Other studies suggest that the skill level and technological

literacy of the teacher can facilitate learning (Wood & Ashfield, 2008). There is no literature examining whether home school parents who are “tech-savvy” are more likely to school their children using technology, or whether a parent’s comfort level and experience contributes to the extensiveness of technology use when homeschooling a child. Homeschool parents often regulate their children’s Internet use and limit access to social networking sites. It is widely known that Internet use can put teens at an increased risk for cyber-bullying and harassment by strangers (Boyd, 2014; Sengupta & Chauduri, 2011).

### **Legality**

By the late 1980s homeschooling was becoming recognized as a legitimate way to school a child in the United States, and in 1993 homeschooling became legal in all fifty U.S. states (HSLDA, 2017). The fastest growing populations of homeschoolers are found in the United States, Australia, Canada, and the United Kingdom (Ray, 2016). According to Gaultney (2016), there has been a 65% increase in registered home educators in the United Kingdom (U.K.) from 2010 to 2016. Data reported by the BBC, show that the U.K. now has more than 36,000 home-educated children (Gaultney, 2016; HSLDA, 2017), however, due to non-mandatory reporting that number is likely to be an underestimate.

HSLDA has expanded its reach establishing *HSLDA Canada*, representing between 22,000-60,000 homeschooling families. Other statistics of home educators worldwide report more than 30,000 homeschooling families in Canada; 4,000 homeschoolers in the Philippines; 6,400 homeschoolers in New Zealand; 750 homeschooled children in Ireland; and somewhere between 20,000-100,000 children are homeschooled in the United Kingdom. The Australian Christian College (Australia’s largest Christian school of distance education) has over 1,700 families, with 4,000 students in its home education programs ranging from Preschool to twelfth

grade (HSLDA, 2017).

Homeschooling is permitted in England and Wales under Section 7 of the Education Act 1996. However, homeschoolers in England are not required to inform authorities before homeschooling, thus contributing to the inconsistencies in the estimation of homeschoolers (HSLDA, 2017). Homeschooling has always been legal in Canada. Three provinces, Saskatchewan, Alberta, and British Columbia provide financial support to parents who choose to homeschool. A report by MacCloud and Hasan (2017) with the Fraser Institute, found that homeschooling is growing at a record rate across Canada. Of the 10 provinces, a collective total of homeschoolers increased by seven percent over seven years. Additionally, every province except Alberta reported a decline in public school enrollment (6.6%) over the past 15 years.

It is difficult to study homeschool families due to the dynamic nature of home education and the reserved manner of many home educators (Apple, 2000). They often receive backlash for their decision to homeschool from local schools, neighbors, and sometimes friends and family. Searching for support, homeschooling families often belong to private and closed communities only for homeschoolers, making the population difficult to reach out to or study. Moreover, research studies often rely on survey results alone and these may fail to capture parents' experiences and accurate reasons for homeschooling (Isenberg, 2007).

Researchers agree that the legalization of homeschooling in all fifty U.S. states, combined with the expansion of the Internet may have led to a growth spurt in homeschooling (Andrade, 2008; Apple, 2010; Farris & Woodruff, 2000; Isenberg, 2007; Lips & Feinberg, 2008; Ray, 2016). Other educational changes and challenges include the widespread reluctance by public school teachers to use technology in the classroom. This is sometimes due to lack of training, and other times a lack of funding. These challenges, coupled with the lack of Internet

access for many students at home, have widened the digital divide (Sidney Howland, 1998). The reality of the “homework gap” between students who have access to technology and those who do not is another concern, and a shortage of available technology in some public schools is contributing to a system of the “have” and “have-nots” (DiMaggio & Hargittai, 2001; Meyer, 2016). Conversely, homeschooling families tend to be middle to middle-upper class and possess the resources needed to have technology available in the home. This privilege may give homeschoolers a head start in life compared to their public schooled peers who have less resources.

### **Democracy and Home Education**

Homeschooling is seen as undemocratic to some (Lines, 1993; Kunzman, 2017; Reich, 2002; Ross, 2009). Ross (2009) strongly asserts that “the state’s interest in educating children for life in a pluralist democracy trumps any asserted parental liberty interest in controlling their children’s education” (p. 991). In contrast, Kunzman (2017) argues that the debate regarding the teaching of democratic liberal values should include religious conservatives who are often asked to compromise their values in schools.

A democracy is made of citizens who participate in civic and political affairs. Romanowski (2006) argues that homeschoolers are more actively involved in their community than the general U.S. population, insisting the “purpose of public education is to educate future citizens who take an active role in improving the social, economic, and political conditions in society... that public schools, not homeschooling, should be scrutinized for their efforts regarding ‘citizenship training’” (p. 127).

Reich (2002) believes that the benefits of individualized instruction that homeschooling provides may be at the cost of an active democratic citizenship. Reich posits home education

“threatens to insulate students from exposure to diverse ideas and people” (p. 56). While researchers like Turkle (2017) warn users of the negative aspects of too much technology use specifically the isolating effects of too much texting, home educators who teach with technology are using technology for more than texting. Other research (Chen & Bryer, 2012; Gikas & Grant, 2013; Longo, 2014) suggests that the use of social media can be a positive participatory event for enriching instruction and connecting people around the globe. Longo (2014) concludes that “social media reorient us to knowledge-making, human interaction, and global impact” (Longo, 2014, p. 22). Longo encourages teachers to observe the connections students are already making and provide modeling of how to use social media to address social issues. Whether homeschoolers are partaking in these available resources is not certain.

Several families homeschool expressly to pass on their morals and values to their young children. The swell of parents homeschooling in the 1990s were Christian conservatives critical of what they saw as a loss of morals and values in the public schools. These parents believed that public schools were indoctrinating the young and influencing children toward following a liberal agenda (Dobson & Bauer, 1994). French sociologist Alexis de Tocqueville examined America and its democracy. His insight remains relevant today:

Alongside these religious men, I observe others whose sights are upon the earth rather than toward heaven. They are the followers of liberty not simply because they regard it as the spring of the greatest benefits. They sincerely wish to guarantee its authority and to enable men to taste its blessings. I realize that these people are about to call upon the help of religion, for they must know that the reign of liberty cannot be established without morality, nor morality without beliefs. (Tocqueville, 1835, p. 21)



Many home educators who are also church-goers no longer see public schools as a haven for morality. The inclusive and tolerant environment in schools has exceeded the “Love your neighbor as yourself” virtue, replaced now by required advocacy for values and social mores perceived as immoral and offensive to many Christians (Haverluck, 2017). Several homeschooling families view the school system as no longer suitable; its environment has changed, and the American education system has lost its moral compass (Bennett, 1995; Dobson, 2005). Disrespect between teachers and students and the competitive nature of testing (driving some administrators to cheat on test reporting) represent a loss of values and a decline in ethical behavior. Tocqueville believed that democracy in America would only survive if governed by people of high morals and ethics.

John Dewey (1903) argued that public schools have long been undemocratic—filled with people who have little say over teaching and learning. “What does democracy mean save that the individual is to have a share in determining the conditions and the aims of his own work” (Dewey, 1903, p. 198). Dewey, defending the positions of both student and teacher, declared that mature minds, the teachers, must interpret the level of their students and proceed to nurture at their level (Dewey, 1902). Curriculum is logical, and a child is psychological. Those outside the classroom who design curriculum and mandate testing often do not know the child in the classroom. Teachers need to know the child first in order to plan the curriculum. Learning is a process to Dewey, a delicate balance of a growing, maturing mind and a benevolent teacher or guide helping the child to transition into the larger society. A wise and mature parent, perhaps a home educator, is in a chief position to balance both curriculum and instruction. However, Dewey would be opposed to home schooling on grounds that it lacks enough diversity of various kinds.

## **Technology and Education**

Discussion and debate regarding educational technology is widespread. Educational technology in classrooms can be traced to the turn of the 20<sup>th</sup> Century from educational radio, to news films, to public television and now computer assisted instruction (Saettler, 2004). Whether changing technologies have benefitted learning outcomes has been the focus of research for decades. Studies show that technology programs have the ability to increase learning in the classroom (Arbaugh & Duray, 2002; Means, 2010; Smaldino, Lowther, Russell & Mims, 2008). Although the quality and character of such learning is itself open to discussion.

Many parents insist that using the Internet is instrumental to preparing their children for the changing job market, one which will depend on technology savvy workers (Livingston & Bovill, 2001). Yet less is known about whether parents or teachers understand how to use the Internet for harnessing the desired beneficial work skills. Furthermore, research results about the harmful effects of technology are conflicting. Empirical evidence that Internet use negatively influences students' academic and social behavior is not conclusive (Griffiths, 1999; Mitchell & Savill-Smith, 2004; Nalwa & Anand, 2003; Stahl, Koschmann, & Suthers, 2006; Young, 2004).

Nicholas Carr (2012) in his New York Times bestseller *The Shallows: What the Internet is Doing to Our Brains*, recalls his gradual journey toward dependence on technology. His book is a warning that the heavy use of the Internet has neurological consequences. He highlights the way that technology forces the brain to change, to respond to the urgency to be connected, to know more, to search for anything and everything to the point of generating anxiety. From the printing press, to the radio, to the television technology has been an active and growing force in the daily routines of teachers, students, families and children. Carr argues that with each invention our brains have restructured to shorter attention spans, and when we go online we are

led into “hurried and distracted thinking, and superficial learning” (p. 116). The changes in technology use are not all positive but not all negative. However, the choices we make will change the lives and society for our children’s children.

As technology evolves, teachers are challenged to understand what and how much knowledge each individual student brings to class. Some students are especially curious and will Google anything that interests them. Others will spend a significant amount of time on their mobile phone texting friends or using social media. Home educators who use technology have a similar challenge to assess what their child knows, observe how independently their child works, and to decide what help or scaffolding might be necessary for continuous learning. A teacher who has experience in a subject matter is trusted to transmit that knowledge to the child. But what about when using technology? Must a teacher know how to use technology and demonstrate familiarity with using applications in order to guide a student toward further positive growth and development? If not, what is the assurance that the child will not enter into a learning experience that is mis-educative or potentially harmful? Among the feared dangers of overusing technology are distracted and obsessive behavior. However, Boyd (2014) says that teens are more often making connections and positive social interaction with others rather than engaging in negative behaviors leading to pathology (p.79). Teachers and parents who are informed about adolescent behavior and technology use are better prepared to weigh the benefits and risks of technology use among teenagers.

A primary role of the teacher is to assess and understand students’ educational experiences and connect those experiences with new instruction leading to forward positive growth (Dewey, 1938). Cuban (2001) studied younger children to see if the very young students could self-regulate their use of technology. Most children could not self-regulate, leaving the

teacher as the model facilitator guiding the cognitive, social and emotional development within the child. Cuban, in his longtime research of teachers and machines, has found that technology has not greatly benefited children in early childhood education.

Good teachers often use technology to gather curriculum and plan instructional activities, deciding how it is appropriate and potentially helpful for a child. Problems arise not necessarily because of technology in itself but because the teacher may fail to use technology appropriately or adroitly. The concerns with the negatives of technology use (e.g., cyber-bullying, addiction, etc.) may arise when a teacher or parent is reluctant to understand the benefits technology can offer young learners. Boyd (2014) says, “adults should help youth develop the skills and perspective to productively navigate the complications brought about by living in networked publics” (p. 211).

### **Home Educators’ Reasons for Homeschooling**

Numerous studies have explored homeschooling as a phenomenon, revealing parents’ personal reasons for homeschooling, common homeschool curricula, and choice of homeschooling methods (Anthony & Burroughs, 2010; Attaran, Maleki & Alias, 2013; Basham, Merrifield & Hepburn, 2007; Collom, 2005; Hanna, 2012; Ray, 2016). Several studies (Boschee, 2011; Grubb, 1998) surveyed parents in the U.S., both state and national, in an attempt to understand why parents choose to homeschool. The existing mainstream view is that the majority of homeschoolers are Christian parents wanting to shield their children from liberal agendas (Ross, 2009; Yuracko, 2008), but this view may not capture the complexity of actual homeschooling motivations and practices.

Some believe that research conducted by homeschooling expert Brian Ray sample mostly conservative Christian populations (Gaither, 2012; McCracken, 2014). Moreover, McCracken,

senior research analyst for the Coalition for Responsible Home Education, criticizes Ray's sample as "whiter, richer, better educated, more Christian, and more married than the general population" (Gaither, 2014; McCracken, 2014). While religious instruction is a common reason parents choose to homeschool, the most recent report of homeschooling statistics by the National Center for Educational Statistics (Redford, Battle, & Bielick, 2016) shows 91% of home school parents say that the environment of other schools (safety, drugs, or negative peer pressure) was the most important reason for homeschooling. The other two popular reasons were desire to provide moral instruction and dissatisfaction with the academic instruction at other schools followed by desire to provide religious instruction, ranked as the fourth common reason.

No studies have been found specifically focusing on how and why 21<sup>st</sup> century home educators use technology to teach their children. Researchers Andrade (2008) and Bullock (2011) suggest that available technologies, such as computers, might influence a parent's decision to begin homeschooling. Bullock (2011) explored how new, innovative technologies influence homeschooling and found that families believe technology can enhance their homeschooling program, provide individualized curriculum, and allow students to work at their own pace.

There are other indications that parents choose homeschooling because access to computers allows them to enhance instruction in home learning (Walters, 2015). Home educators often switch curriculum or modify their pedagogy to suit their children's needs (Roskamp, 2017) and the Internet has made this easier than ever before. Since the mid 1990s, the rapid number of online and distance learning courses available has been increasing, prompting the National Education Association to predict that "by 2006 a majority of American high school students will have completed at least one online course before graduation" (Barbour & Reeves, 2009, p. 404).

Current reports show over 500 virtual schools exist with close to 300,000 students enrolled across the U.S. (Molnar et al., 2017).

New research shows that familial closeness is one reason many parents homeschool (Lois, 2013). Sociologist Jennifer Lois (2013) interviewed stay-at-home mothers who said that they chose homeschooling because they did not wish to lose the deep bond they had developed with their children. Lois's study described how stay-at-home mothers perceive homeschooling as a way to continue having a close relationship with their children (Lois, 2013). Moreover, a study of homeschooling families in Quebec, Canada, revealed that homeschool parents ranked being together as a family at the top of the list of their reasons to homeschool. Social-emotional welfare of the child was also an important reason for homeschooling (Basham, Merrifield & Hepburn, 2007).

Van Galen (1988) discovered that some homeschool parents are not deterred from homeschooling by their own lack of credentials or knowledge in the field of teaching. Parents she interviewed believe they do not have to be experts in all school subjects, hold an advanced degree, or need a teaching certificate to successfully school their children at home. Home educators in Van Galen's study viewed themselves as an overseer to their children's education. They believe that the person who wrote the curriculum would be knowledgeable about the subject, concluding that a homeschool parent would not need to have a license to teach when primarily overseeing their child's work. These home educators rely on the expertise of the curriculum designers and become more like facilitators or cheerleaders rather than home educators wholly responsible for their child's education. The availability of advanced curricula, including videos and links to teachers who are experts in their field, might influence a parent's decision to homeschool, easing fears related to lack of subject knowledge or credentials

(Andrade, 2008). How home education has evolved in the 21<sup>st</sup> century with the abundance of technological tools is new territory to explore.

### **Homeschooling Methods**

Basham, Merrifield and Hepburn (2007) found that homeschool parents strive to provide their child with appropriate curriculum for cognitive development, while also preparing a place for the child to feel most comfortable, socially and emotionally, while learning. It is common for children in a homeschool environment to benefit from the absence of unsafe and disorderly classrooms, of time limitations, negative peer pressure, bullying, and the boredom of repetitive lessons experienced in state and private schools (Moore, 2009). Ideally, homeschooling affords parents and their children to work together to meet the educational needs of the child, allowing learning to happen progressively and organically (Holt, 1982).

Many parents homeschool their children with a purchased curriculum that they perceive is well-suited to their child's learning preferences (Taylor-Hough, 2010). Other parents design a more eclectic curriculum, using a combination of packaged curriculum and online resources (Carpenter & Gann, 2015). More homeschoolers are now enrolling in community college classes where they are receiving dual high school and college credit (Ray, 2016). Furthermore, according to Holt (1982), child interest-led learning is common among homeschoolers. Research shows that child-led and interest-inspired learning is optimal in home education, especially for students with disabilities, where regulations are few and parents and their children have the freedom to teach and learn how they desire (Liberto, 2016).

Hundreds of informative and supportive websites, plus social media platforms, are now available for new homeschoolers, where parents and teens connect with other homeschoolers locally and globally (Hanna, 2012; Kochenderfer, 2016). Apple (2010) raises concerns that

homeschooling groups such as evangelical conservatives are using technology to strengthen the homeschooling social movement, suggesting it has become an influential entity for advocacy work and lobbying. While it is difficult to know how many homeschooling mothers, homeschooling fathers or homeschooled children take advantage of instructional materials available online, the increasing amount of resources provides interested home educators with choices and support networks that were non-existent in the 1970s. However, Jacobson (2011) found that although home educators have access to several online support groups, some homeschoolers are more intentional about keeping the traditional face-to-face interaction between parent and child as part of the educational experience.

### **Technology Use in Traditional Schools**

Technology integration in public schools has been slow (Cuban, 2001). Teachers' hesitancy and unfamiliarity with using new technologies along with the added time necessary to learn new ways of teaching are common reasons for late adoption. To address these obstacles, Zhao and Cziko (2001) point out that teachers do not have to be computer experts to teach with technology but can utilize support from technical experts or even tech savvy students. Prensky (2001) goes further insisting that veteran teachers, as "digital immigrants," should not be worried about learning to use new technology but that the students "digital natives" should have more say in how they use technology for learning in the classroom. Some teachers' reluctance to use computers for fear of being replaced by them contributes to an overabundance of computers in classrooms (Li, 2007; Cuban, 1986).

It is thought that teachers need a new mindset, that technology is more than a supplemental teaching tool (Ertmer & Ottenbreit-Leftwich, 2010). In a longitudinal study, Levin and Wadmany (2008) found that teachers who used technology over a three-year period changed



their teaching views from transmitters of knowledge to seeing teaching and learning with technology as an interactive, interpretive and constructive process. It has been found that more teachers use technology for preparation and communication rather than for instructional or learning activities. This was truer for new teachers rather than veterans who used technology for learning activities in the classroom (Russell, Bebell, O'Dwyer, & O'Connor, 2003). However, a study by Inan and Lowther (2010) found that veteran teachers' desire to integrate technology into their classrooms decreases as their teaching years increase.

While schools that have an abundance of technology are often highlighted in publicized events and trials, Attewell (2001) says that most schools lack networked computers and are using old hardware. Other researchers caution having an overly optimistic view of technology integration in education, warning that technology is not only used for improvements in teaching and learning but promoted by some with overriding economic and political interests (Fabos & Young, 1999). Computers can be valuable tools that influence education. However, teachers' views, along with what teachers do with technology in a classroom setting, dictate practice. When studying computer integration in classrooms, Mehan (1989) found, "It is not the features inherent in the machine but what people do with the machine that determine how microcomputers will be used in education" (p. 5). Mehan also noted the positive outcomes of peer collaboration and other constructivist teaching tendencies when activities on the computers involved more independent and student-directed learning.

Some teachers endorse more technology use in the classroom claiming that it allows greater autonomy for the student (Christensen, Johnson & Horn, 2010; Lieberman & Linn, 1991). However, Akerlind and Trevitt (1999) argue that self-regulation skills are not developed in students who are in the habit of receiving knowledge from the teacher. New changes that

learning with technology may bring (e.g., replacing teacher directed instruction) can result in student resistance to a greater reliance on technology for instruction. Akerlind and Trevitt suggest teachers become aware of the stress students experience from changes in the nature of teaching and learning due to the introduction of new technology skills. Involving students in the process of change is necessary. It is naive to disregard students' attitudes or assume feelings are positive toward managing their own learning with technology.

### **The Evolution of Home Education**

In alignment with childhood learning theories developed by psychologists Vygotsky, Bruner, and Gardner (Fosnot & Perry, 1996) the idea that children construct their own knowledge with the cooperation of the teacher, Berge and Collins (1995) posit that with the availability of computers children who wanted to would have a chance to move from passive receivers of knowledge to students capable of constructing their own knowledge with guidance from the teacher. As technology has evolved from desktops to mobile devices, many homeschooled students have an opportunity to explore their own interests and to become active participants in their own education as parents oversee their children's schoolwork (Van Galen, 1988). In their study of computer-mediated instruction, Berge and Collins (1995) concluded, "The active environment of social learning provided by a computer with access to local, national, and international networks increases interaction and communication among students, their teachers, peers, parents, and other members of the world community" (Berge & Collins, 1995, p. 6). Home educators are discovering a whole new world as they allow their very young children to play and learn, sometimes unregulated, with online programs, YouTube videos, popular websites and through social networking sites such as Facebook (Davis, 2014).

Following a review of the literature on reasons for homeschooling children, homeschooling methods, the history and legality of homeschooling, and the evolution of home education with changes in technology, I pick up where Andrade (2008) left off, seeking to explore how technology may have supported the expanding number of homeschooling families and motivated them to teach their child at home. I will investigate and depict how home educators use technology for homeschooling, capturing their attitudes, values, and beliefs regarding technology use. I will also analyze how they see themselves as teachers when using technology in a home school setting.

### **Chapter 3 Methods**

In this chapter I describe the details of data collection, the study design and the methodology I used. The participant selection process is reported as well as a snapshot view of the interviewees, data analysis, and ways I address the validity and trustworthiness of the study. The courteous and ethical treatment of all participants and limitations are also discussed.

#### **Data Collection**

Charmaz and Belgrave (2012) suggest that before conducting a research study, qualitative researchers know something about the population being studied. Researchers who know their audience can construct more in-depth and focused questions. As a home educator who felt the weight of complete responsibility for my children's education, I have been able to appreciate some of the trials that homeschooling families endure. Moreover, this knowledge aided me in forming research questions regarding home educators' choices and their justifications in homeschooling.

While surveys are an important instrument for gathering a large amount of data, surveys alone cannot fully capture the intimate details or personal sacrifice that dedicated homeschooling parents often feel about their responsibility. It is nearly impossible using a closed-choice questionnaire alone to accurately measure the views and experiences of respondents (Isenberg, 2007). For this reason, the questionnaire for this study included both closed- and open-ended questions, allowing home educators to elaborate on their responses. Including open-ended questions helps to fill in the gaps when statistics fail to capture the complete story. For example, as part of the questionnaire for this study, a text box was provided under question six (see Appendix C) regarding reasons for homeschooling. One home educator, Survey Respondent number 10, explained the difficulty of responding to questionnaires questions based on the choices provided:

SR 10: *Desire to provide non-traditional education* can be interpreted in many ways. For us it is simply that the way schools do it is not effective because it is enforced. So it's not necessarily the content but the fact that when my children come to it they do because they want to learn about that. It takes [sic] all the difference. Also it eradicates the bullying schooling does as the children have not got freedom and autonomy to pursue their own interests, they are coerced day in and day out. I believe this is very damaging for a human being. Mental health problems are skyrocketing amongst children between the ages of 8-18. I believe traditional schooling is to blame for a lot of it. Also we don't do any religious instruction (but we do philosophy) and we don't have any kids with special needs but the system above doesn't allow for me to enter 1 twice, so I had to put 2 in special needs and 1 in religious education even when we're not religious at all.

In qualitative research the researcher can sometimes be seen as a translator or interpreter of culture (Glesne & Peshkin, 1992). Qualitative researchers who are interpreters draw on their own experiences. They “think of themselves not as authority figures who get the ‘facts’ on a topic, but as meaning makers who make sense out of the interaction of their own lives with those of their others” (Glesne & Peshkin, 1992, p. 153).

To answer the second question in my study: *How do home educators see themselves as teachers when using technology to homeschool?*, I asked parents to describe their perceptions of teaching with technology by using one of four metaphors: I am the teacher and technology is my assistant; Technology and I are co-teachers; Technology is the teacher and I am the facilitator; and, I am the Cheerleader while my children use technology to teach themselves. Metaphors are sometimes used to communicate a theory or concept because the metaphor can be a “powerful conceptual means, for framing and defining teachers’ awareness of their beliefs” (Shaw & Mahlios, 2008). It is possible that home educators find it difficult to describe their particular theory or philosophy of teaching explicitly, but are able to express such a theory or philosophy by using an analogy or metaphor. Metaphors can help parents to more easily describe their perceptions of teaching and using such symbolic language is a way to assist in the collection and interpretation of data, when examining a question would be difficult without the aid of a metaphor (Kliebard, 1982).

The metaphors chosen for this study may express parents’ understandings about how they teach with the aid of technology. The metaphor of Assistant or Co-Teacher reflects an understanding that the teacher is a transmitter of knowledge, with technology playing a large role as helper in assisting in this transmission; Facilitator and Cheerleader are metaphors that can

communicate how parents see themselves in supportive roles while technology is the primary teacher.

The Assistant and Co-Teacher metaphors describe theories of teaching that are perceived as teacher-centered instruction and Facilitator and Cheerleader metaphors reflect student-centered instruction (Felder & Brent, 1996; Relan & Gillani, 1997). The metaphor of technology as Assistant or Co-Teacher casts the teacher in a role of authority in the classroom who only uses technology to supplement or augment curriculum. The metaphors of Cheerleader and Facilitator describe a teaching approach that is student-driven, allowing the children more freedom to direct their own learning while the teacher stands in a supportive role.

In addition to the four metaphors, an open text-box was provided on the questionnaire for parents who wished to explain in more detail their beliefs and experiences about teaching with technology. Several parents presented another metaphor, “Technology as a tool,” to describe their perception of teaching with technology. During interviews the interviewees were free to reflect on and modify their beliefs through discussion of the metaphors (Tannehill & MacPhail, 2014). Other home educators reported that they see themselves stepping into more than one role depending on the ages and individual needs of their children, for example sometimes as Co-teacher and other times as Facilitator.

Qualitative research in the form of interviews can assist in capturing the often multifaceted reasons parents choose to educate their children at home, by allowing parents to explain more fully themselves. Maxwell (2005) points out that the qualitative researcher uses her “eyes and ears” as tools to make sense of what is going on in the lives of the participants. Maxwell goes on to describe that the researcher, as the research instrument, uses methods of informal data-gathering strategies while interviewing participants such as “hanging out” and

having casual conversations (p. 79). In this context, I attempted to develop a harmonious relationship by providing a glimpse of my experiences as a home educator at the start of a casual conversation with the participants. This enabled me to set the context and then listen to the home educators' experiences and perspectives. As I listened and processed the experiences according to the interviewees' particular situation, I would record the data in a field journal during the interview and continue recording my thoughts and reactions immediately following the interview. As I interviewed participants, I noted how they emphasized words, and recorded their nonverbal behavior, for example excessive hair-touching or throat-clearing. I also noted their intonation as they revealed their thoughts and feelings about their decision to homeschool and their comfort with using technology. I sensed, through their words and behavior, whether participants were uneasy with homeschooling, had conflicting beliefs about technology, or were defensive or resigned with their choices.

My affiliation with the homeschooling community helped me achieve rapport with interviewees. Having a common bond seemed to help elicit greater candor from the interviewees, resulting in more vulnerability and open dialogue. I attempted to achieve a closer relationship with the parents by sharing when my experiences were similar to theirs; for example, explaining that my daughter has dyslexia and how I felt technology helped to meet her learning needs. This common bond with the homeschool parents helped establish an open, trusting and transparent relationship during the interview. Through individual, semi-structured interviews participants were asked to share in detail their views about technology and homeschooling, their reasons for homeschooling, and how they perceive themselves as teachers in relation to using technology in their homeschool. I began with shorter, introductory questions from the initial questionnaire. As the interview progressed, I asked more pointed questions, probing for richer, more descriptive

details.

## **Study Design**

The research methodology for this study is a convergent design (Creswell, Clark Plano, Gutmann & Hanson, 2003), where the quantitative data provide the general picture of home education (e.g., reasons for homeschooling, technology use, and home educators' perceptions of technology use in their homeschool), and the qualitative data provide the in-depth picture of this phenomena. Both the quantitative survey data and the qualitative data both inform my interpretation. Qualitative research data gathering involves noticing nuances, including pictures of the interviewees pausing, stuttering, the repetition of phrases, and other social cues, which composes the emotions of the participants; such details could never be observed in a questionnaire.

A good qualitative study is rigorous, systematic, and conducted in an ethical manner, producing valid and trustworthy results (Creswell et al., 2003; Maxwell, 2005; Merriam, 2009). A qualitative approach was chosen for this study in order to better understand the world in the way the participants experience it. I wanted to hear home educators explain their experiences in their own words, to sense what it is like to walk in their shoes (Kvale, 2006). A constant comparative analysis of the survey data and interview data is a method that can be used to identify broad themes and patterns or categories that emerge from qualitative data. Coding was based on significant themes or categories generated from data rather than a pre-established theory (Hewitt-Taylor, 2001). Data analysis for this study was inductive, attempting to understand individual perceptions rather than substantiate an existing theory. Data was constantly re-examined after the initial coding until no new themes appeared (Charmaz, 2008; Creswell et al., 2003). Furthermore, I regularly reviewed my field journal for any other



interpretations that were perceived at the time. The lengthy questionnaire was intended to gather descriptive and narrative data providing a general overview, while also capturing a clear representation of the beliefs and attitudes of home educators who use technology for homeschooling.

For this study, I collected quantitative and qualitative data, sequentially. I first gathered survey data, then conducted interviews with thirteen survey respondents who provided E-mail addresses indicating their willingness to participate. The survey data were coded using line-by-line coding, where one and two letter codes were used to methodically work through the data to record words and phrases that seemed significant and to capture the nuances of the home educators' experiences (Creswell et al., 2003). The data were analyzed and organized into categories such as dissatisfaction with traditional schools, family bonding, facilitated learning, and others that will be discussed in a later chapter of this dissertation. In addition to gathering statistical data, several open-ended questions on the questionnaire allowed respondents to provide additional thoughts and feelings, and to share their detailed experiences of homeschooling using technology.

## **Methodology**

Interviewing is an effective method of gathering data of participants' experiences, values, attitudes, and perceptions. Qualitative data gathered through in-depth interviews added further truthfulness and reliability to the study (Maxwell, 2005). Written summaries of conversations with the interviewees included detailed descriptions from the audio-transcripts plus reflections from my field journal. I did this in order to characterize how the interviewees go about daily activities (Emerson, Fretz, & Shaw, 1995), and to capture their authentic and habitual experiences. The data gathered from the interviews were compared to and analyzed with data

gathered from the structured open-ended questions from the questionnaire. Reviewing my reflections of the recorded perceptions in my field journal was also part of the process.

Beginning with the structured open-ended questions they had answered on the questionnaire, I would ask interviewees to explain in more detail the answers they provided. My personal and professional experience allowed me to empathize with the participants, which at times caused the conversation to wander off on tangents, such as thoughts about teaching as a profession, rather than homeschooling with technology. The structured questions from the questionnaire assisted in getting the interview back on track. Sensitive to the need for debriefing, I encouraged interviewees to further clarify their thoughts and interpretations of the interview questions and offered a chance to revise their responses to closed-ended questions or give suggestions for clarifications of questions on the questionnaire (Hughes, 2004). For example, one interviewee mentioned that homeschooled children cannot be classified as a certain grade level, suggesting that question be left out next time I design a questionnaire. Another interviewee said that she did not feel technology was “satisfying” but only one way to retrieve information. I restated for each interviewee that their name, and their children’s names, would not be used in the study, but would be replaced by pseudonyms. I also assured them that I was the sole researcher and anything they shared would be confidential.

Interviews lasted between thirty and sixty minutes. All interviews were audiotaped and transcribed, verbatim, within 24 hours of the interview in an effort to ensure accuracy of data. Asking for feedback from interviewees about data collected, known as respondent validation or member checking, was also used as evidence for the validity of the study (Maxwell, 2005). I compared data from the questionnaire with interview data, inductively, to identify patterns, relationships, and emerging themes (Charmaz, 2008; Ryan & Bernard, 2003).

During interviews it was imperative for interviewees to see me as honest, open, and fair in order to establish trust (Rubin & Rubin, 2005). If the interviewee shared something common to my experience, I mentioned the similarity and built an additional connection establishing quick rapport. The interviews consisted of structured and semi-structured questions, some from the initial questionnaire while other more pointed questions arose during the interview. Interviewees elaborated on experiences providing clear, detailed descriptions allowing me to pick up on the nuanced feelings and experiences that surfaced through the conversation. All interviews were transcribed from audio recording to written page form, and then condensed into one- to two-page summaries. The process entailed coding prominent words and phrases from survey data and the interview data. Both were examined with rigorous and methodical analysis, using a constant comparative method. Finally, member checking provided participants the chance to examine the data for accuracy in capturing their experiences, their values, beliefs, attitudes, and perceptions.

### **Research Questions for Interviewees**

1. How do you homeschool with technology?
2. How do you see yourself as a teacher when teaching with technology?
3. Why do you use technology for homeschooling?
4. What is most satisfying about homeschooling with technology?
5. What is most challenging about homeschooling with technology?
6. How has the use of technology changed over the years you have homeschooled?

### **Participant Collection Process**

Originally, I intended to recruit homeschoolers for the study from the Kansas City area, close to where I live. However, at the start, I felt that the local demographic was too

homogenous. The data would come from a large homeschooling association where families are mainly white, middle class, and Christian. Wishing to gather a diversity of perspectives from home educators of varying races, ethnicities, educational philosophies, and religious affiliations, if any, I decided to expand the research pool to homeschool parents from national and international groups found on Facebook. I posted the survey link to various Facebook homeschool groups, those described as secular, national, international, and minority groups. I chose this avenue for recruiting participants because tens of thousands of homeschoolers are now connected through hundreds of support groups available on Facebook (Homeschool Base, 2017). A study which focused on homeschooling mothers' use of technology found that marginalized families are using Facebook Groups to meet with other home educators who share similar values and philosophies (English, 2016). Parallel to Apple's (2013) argument, English posits that Facebook groups provide a "sanctuary" for mothers who may be struggling to find support within their face-to-face local community.

Nearly all of the Homeschool Facebook groups are "closed groups" allowing only current homeschoolers to join. I contacted the administrator of each closed group, introduced myself, explained my study, and gained approval to join. I then posted the link on each Facebook page with a brief invitation for parents to take the survey. I believed this recruiting method would give me access to a significant number of homeschool parents who use technology on a regular basis. One limitation of using this convenient method of data collection is that it results in a nonrandom sample of home educators that is not representative of the homeschooling population as a whole. It is to be expected that home educators who are comfortable using technology will be more willing to share their experiences using technology for homeschooling and will be over-represented. This sample cannot be seen as representative of most homeschoolers as nearly half

of the parents who responded to the survey (49%) are new to homeschooling and almost all (96%) use social media to connect with other homeschoolers. Seventy-nine percent reported that they see themselves as proficient in using technology, and a large majority (83%) believe that technology is critical to their child's learning experience.

Data were collected in two phases. I used a questionnaire with both open- and closed-ended questions to produce descriptive statistics and provide a general overview of the population being studied (Creswell, 2007). This was followed by semi-structured interviews with parents who volunteered to be interviewed for the study, providing an in-depth view of the meanings and values held regarding homeschooling and technology use. Some text-box survey responses ranged from one or two brief sentences to full paragraphs ranging from 100 to over 300 words. While conducting line-by-line coding, words and phrases of significance were recorded in the right side margin of the page. As an experienced home educator and conscientious researcher, I noted familiar phrases I heard from parents such as, "child interested learning," "independent study," "gifted," "networking," and "technology as a tool." For example, while analyzing one of the survey questions, after recording nearly 100 significant words and phrases, I combined phrases that were alike, eventually reaching 32 categories representing the most familiar values, beliefs, and attitudes. These categories were identified by one and two letter codes. I then read the survey responses a second time, labeling words and phrases with the letter codes. I then counted frequencies and noted emerging patterns. Finally, I organized the patterns into themes that were revealed from the data.

Survey data were collected during a six-week period, and interviews were conducted within the following four weeks. At the close of the survey, E-mails were sent to 76 respondents who left contact information indicating their willingness to participate in a follow-up interview.

E-mails included a brief introduction of who I am and a letter of consent to participate (see Appendix B). I received replies from thirteen parents who volunteered for the interview part of the study. After several exchanged E-mails, communication dropped off from one participant. One other attempt was made to recruit interviewees, and in an attempt to gain a greater diversity of perspectives, I contacted respondents who specified an ethnicity or gender different from the majority of respondents who were female and Caucasian. I received four replies, from respondents that identified as Asian, Black British, and two Caucasian male participants. The multiple attempts I made to secure an interview with each one of these participants resulted in an interview with a home school father (see Table 1).

**Table 1. Snapshot View of Interviewees.**

<b>ABIGAIL</b> (interview via Google Hangout)		<b>ANDREW</b> (audio interview via Skype)
American, White female		American, White male
Number of years homeschooling: 8		Number of years homeschooling: 14
Number of Children: 3		Number of Children: 2
Grades taught: K-6		Grades taught: K-12
Type of homeschooling: Unschooling		Type of homeschooling: Traditional and Online Courses
Regulates technology use: Yes		Regulates technology use: Yes
Education: Master's degree		Education: Bachelor's degree
<b>ANGELA</b> (interview via Email)		<b>ANNE</b> (interview via Email)
American, White female		Canadian, White female
Number of years homeschooling: 8		Number of years homeschooling: 1
Number of Children: 3		Number of Children: 1
Grades taught: K-9		Grades taught: K-3
Type of homeschooling: Unschooling and Traditional		Type of homeschooling: Charlotte Mason, Unschooling

Regulates technology use: Yes		Regulates technology use: Yes
Education: Bachelor's degree		Education: Bachelor's degree
<b>CATHERINE</b> (interview via Email)		<b>DEANNA</b> (in person interview)
American, White female		American, White female
Number of years homeschooling: 1		Number of years homeschooling: 19
Number of Children: 2		Number of Children: 4
Grades taught: 4-7		Grades taught: K-9
Type of homeschooling: Traditional homeschooling		Type of homeschooling: Co-Op, DVD lectures, Dual enrollment
Regulates technology use: Yes		Regulates technology use: Yes
Education: Doctorate		Education: Bachelor's degree
<b>ERIN</b> (interview via Email)		<b>JESSICA</b> (interview via Email)
British, White female		American, White female
Number of years homeschooling: 11		Number of years homeschooling: 1
Number of Children: 2		Number of Children: 2
Grades taught: K-9		Grades taught: K-9
Type of homeschooling: Traditional homeschooling		Type of homeschooling: Eclectic
Regulates technology use: Yes		Regulates technology use: No
Education: Master's degree		Education: Bachelor's degree
<b>JULIA</b> (interview via Skype)		<b>LYDIA</b> (in person interview)
British, White female		American, White female
Number of years homeschooling: 1		Years homeschooling: 6
Number of Children: 1		Number of Children: 2
Grades taught: 4-7		Grades taught: 4-12
Type of homeschooling: We do a mix. We are child led.		Type of homeschooling: Unschooling
Regulates technology use: Yes		Regulates technology use: No
Education: 2-year degree		Education: Bachelor's degree

<b>MAGGIE</b> (interview via Skype)		<b>SYLVIA</b> (in person interview)
American, White female		American, White female
Number of years homeschooling: 3		Number of years homeschooling: 19
Number of Children: 2		Number of Children: 4
Grades taught: 4-12		Grades taught: K-12
Type of homeschooling: Traditional homeschooling		Type of homeschooling: Traditional Homeschooling, Online, Eclectic
Regulates technology use: Yes		Regulates technology use: Yes
Education: Bachelor's degree		Education: Bachelor's degree, plus graduate level and professional coursework
<b>ROSE</b> (interview via FaceTime)		
American, Black female		
Number of years homeschooling: 19		
Number of Children: 5		
Grades taught: K-12		
Type of homeschooling: Traditional homeschooling		
Regulates technology use: Yes		
Education: Bachelor's degree		

Thirteen participants were interviewed in person, by E-mail, or by audio- or video-conferencing. Parents were asked to describe their experiences in more detail, extending the meaning from their written responses on the initial questionnaire. Each interviewee expanded on their reasons for homeschooling and how they perceived themselves as teachers while using technology (see Table 2). The interviews substantiated survey responses as well as added more detailed descriptions to the data through personal stories (Kvale, 2006; Rubin & Rubin, 2005). Due to geographical hurdles and time zone differences, interview data were collected in various ways. Attempts were made to conduct interviews in person or face-to-face; however, five of the



interviewees requested that the interview take place through E-mail because of Wi-Fi issues, for less chance of interruptions by family members, and for other personal reasons.

**Table 2. Interviewees' Reasons for Homeschooling and Perceptions of Teaching with Technology.**

Name & Residence	Top Reasons for Homeschooling	Perception of Teaching with Technology
Rose U.S.	<ol style="list-style-type: none"> <li>1. Dissatisfaction with traditional schools</li> <li>2. Concern about environment of schools</li> <li>3. Provide nontraditional education</li> </ol>	I am the teacher and technology is my assistant.
Catherine U.S.	<ol style="list-style-type: none"> <li>1. Provide nontraditional education</li> <li>2. Children with special needs</li> <li>3. Family bonding</li> </ol>	Technology and I are co-teachers.
Angela U.K.	<ol style="list-style-type: none"> <li>1. Provide nontraditional education</li> <li>2. Concern about environment of schools</li> <li>3. Family bonding</li> </ol>	I am the teacher and technology is my assistant.
Anne CAN.	<ol style="list-style-type: none"> <li>1. Religious instruction</li> <li>2. Family bonding</li> <li>3. Concern about environment of schools</li> </ol>	I am the teacher and technology is my assistant.
Abigail U.S.	<ol style="list-style-type: none"> <li>1. Provide nontraditional education</li> <li>2. Family bonding</li> <li>3. (Not provided)</li> </ol>	Technology is a tool.
Maggie U.S.	<ol style="list-style-type: none"> <li>1. Religious instruction</li> <li>2. Family bonding</li> <li>3. Concern about environment of schools</li> </ol>	I am the teacher and technology is my assistant.
Erin U.S.	<ol style="list-style-type: none"> <li>1. Travel</li> <li>2. Family bonding</li> <li>3. Provide nontraditional education</li> </ol>	I am the teacher and technology is my assistant.

Lydia U.S.	<ol style="list-style-type: none"> <li>1. Dissatisfaction with traditional schools</li> <li>2. Children with special needs</li> <li>3. Provide nontraditional education</li> </ol>	Technology is the teacher and I am the cheerleader.
Sylvia U.S.	<ol style="list-style-type: none"> <li>1. To fine tune educational choices to the individual student's needs and strengths</li> <li>2. Family bonding</li> <li>3. Concern about environment of schools</li> </ol>	I am the teacher and technology is my assistant.
Deanna U.S.	<ol style="list-style-type: none"> <li>1. Religious instruction</li> <li>2. Family bonding</li> <li>3. Concern about environment of schools</li> </ol>	I am the teacher and technology is my assistant.
Jessica U.S.	<ol style="list-style-type: none"> <li>1. Family bonding</li> <li>2. Provide nontraditional education</li> <li>3. Dissatisfaction with traditional schools</li> </ol>	Technology and I are co-teachers.
Julia U.K.	<ol style="list-style-type: none"> <li>1. Dissatisfaction with traditional schools</li> <li>2. Concern about the environment of schools</li> <li>3. (Not provided)</li> </ol>	Technology is the teacher and I am the facilitator.
Andrew U.S.	<ol style="list-style-type: none"> <li>1. Dissatisfaction with traditional schools</li> <li>2. Religious instruction</li> <li>3. Flexibility for extra-curricular arts</li> </ol>	Technology is a tool.

Interviews with E-mail participants were ongoing, asynchronous, and were analyzed continuously throughout correspondence. All E-mail conversations were conducted in one continuous threaded conversation. Ongoing communication with interviewees resulted in over 130 E-mail exchanges, with an average of eight E-mails per interviewee.

Researchers Bowden and Galindo-Gonzalez (2015) have noted that E-mail interviews are not meant to replicate traditional face-to-face interviews but hold their own unique advantages and limitations. They explain that the researcher: 1) identifies constraints; 2) adequately prepares for the interview; 3) establishes rapport; 4) asks appropriate questions; 5) actively listens; and 6)

ends the email interview appropriately (Bowden & Galindo-Gonzalez, 2015). I considered E-mail interviews appropriate because of a strong commitment to the topic of interest, common experiences with the participants, and the interview process itself (Charmaz & Belgrave, 2012). Having been a member of a parent educator's association and my long-time affiliation as a home educator provided me with "credentials" to ask questions, from someone who has likely undertaken similar experiences. My experience and interest in the topic compelled me to listen intently to the home educators I interviewed. This circumstance, apparent in the answers from interviewees, played a part in creating a measure of candidacy allowing interviewees to share more of their story than they would with another researcher who lacked such experience (Jacob & Eurgerson, 2012). As the researcher is the instrument (Maxwell, 2005), I carefully considered how to make the online exchange an open, natural and comfortable conversation. Interviewees openly shared their objections to traditional schools' agendas, their fears and insecurities of homeschooling, their personal experiences with public education, and their reservations regarding too much technology use.

For this study a number of considerations suggested by Bowden and Galindo-Gonzalez (2015) were noted prior to the E-mail interviewing stage. First, participants must have access to the Internet and have sufficient computer literacy skills. The interviewees in this study left E-mail addresses to show willingness to answer further questions. Second, there would be a lack of social cues to demonstrate listening and understanding. In attempt to communicate feelings, pauses, and social cues, I encouraged participants to use emojis, or give a greater detailed explanation to overcome the lack of non-verbal cues, for example, \*rolling-eyes\*, (sigh), ;-), and other abbreviated conversational jargon often seen in texting (Opdenakker, 2006).

A third consideration is the need to wait several days between responses from participants. Being transparent and clearly communicating the purpose and timeline for my study encouraged participants to answer promptly. Additionally, I sent E-mail reminders during the member-checking phase of the study. Fourth, in order to build rapport, I was deliberate in establishing a connection by sharing some of my experience in home education. I began each interview with introductions such as how many children homeschooled, amount of time homeschooling, and homeschooling methods. Fifth, to help ensure validity, the conversation was constructed by returning E-mails from the original E-mail invitation, thus creating a continuous, nested, and timely conversation. I read the E-mails carefully to be sure the story was consistent and the conversation progressed naturally. Follow-up questions were answered within one to two days, and participants provided further details when asked probing questions. Finally, to avoid a possible “loss” from participants’ drop off or lack of interest, I informed participants that interview questions would be similar to those from the questionnaire, and no significant time commitment was expected on their part. I believed this understanding of my participants’ busy lives would create a greater willingness to participate.

The five participants who engaged in E-mail interviews responded with honesty and eagerness to continue the conversation, stating, for example, “Let me know if you need any further explanation,” and “Happy to help.” Another participant explained that she tried not to go back and re-read or delete her E-mails to keep them as spontaneous and as much like conversation as possible.

While one potential disadvantage of an E-mail interview is the loss of spontaneity, a potential advantage is richness of data collected. The interviewee can take time to respond to the developing dialogue, generating in-depth answers with well-spoken and descriptive detail. One

other disadvantage is that concluding an ongoing E-mail interview may be difficult, leaving both parties feeling like the interview ended with an abrupt withdrawal. However, an already established friendly relationship is conducive to respectful closure (Opdenakker, 2006).

The E-mail method of interviewing is advantageous when the interviewer has no budget for long distance calls, or the time and means for traveling and when both the interviewer and the interviewee are competent enough in expressing thoughts through typing. E-mail interviews also allow the researcher and subject to work through time differences due to geographical separation and incompatible time zones. Asynchronous interviews can also provide time for the researcher and interviewee to reflect on the question, and to construct thoughtful questions and meaningful answers which they wish to convey (Opdenakker, 2006).

In-person interviews were conducted at a neutral public location. In order to be an actively engaged listener and a responsible researcher, the interviews were audio-recorded with permission, transcribed verbatim, in full, then analyzed and interpreted using an inductive approach (Ryan & Bernard, 2003). When transcribing interviews from audio form to written form, efforts were made to include pauses, repetitions, tone of voice, and other behaviors such as laughter. This was instrumental in transforming the conversation into a narrative and preserving the meaning of the participants' stories (Kvale, 2006).

### **Data Analysis**

A line-by-line approach was used to analyze the respondents' phrases or expressions, in order to reflect their world-view while not intentionally accepting that world-view to be singularly true (Gibbs, 2007). Repetition of phrases made it easier to identify categories. Line-by-line coding and constant comparison of data from open-ended questions led the process to the point where no new data was revealed (Maxwell, 2005). There is little known about home

educators' perceptions of teaching with technology in a homeschool setting; thus this method of research was appropriate for this study in order to tell an enlightening story about this phenomenon (Mertz & Anfara, 2006).

After transcribing the interviews, they were analyzed, and then written as one to two-page summaries (Kvale, 2006). E-mail interviews were also analyzed and written as summaries. The summaries were then sent to the interviewees for checking that their experiences, attitudes, beliefs, and values were captured accurately during the interview (Maxwell, 2005). Lastly, the coded and analyzed interviews were compared to the data gathered by the initial survey, until no new themes emerged (Charmez, 2008). This process of triangulation was used to insure descriptive, interpretive, and theoretical validity (Maxwell, 2005).

Data analysis for the study was immediate and ongoing (Maxwell, 2005). I kept a field journal to record my thoughts, reactions, and feelings during the collection of survey responses and continuously throughout the interviewing and analysis process. I analyzed E-mail and video interviews concurrently with in person interviews. While data was collected, part of my analysis was recording words or phrases that were common or repetitive among interviewees, and then categorizing these responses to understand the interviewees' experiences to the point of saturation (Maxwell, 2005). The analysis of the written responses to the open-answer questions from survey data, using line-by-line coding, plus using a constant comparative method with the individual interviews, was instrumental in providing a clearer and accurate picture of how homeschool parents use technology and how they practice teaching with technology in their homeschool.

## **Validity and Trustworthiness of Data**

To collect data, I used convenience sampling. Convenience sampling is a type of nonprobability sampling method that is used for data collection from a population when time, funding or accessibility pose challenges for the researcher (Etikan, Musa, & Alkassim, 2016). The survey for this study, distributed via Facebook, is the available data source I used that was convenient for this study. Convenience sampling differs from random sampling and one disadvantage is that it is usually biased; therefore, the results in my study are not generalizable and not to be taken as representative of the entire homeschooling population.

This research study intended to collect the personal stories, practices, beliefs, and attitudes of the participants. The desired result is to gain an understanding of homeschool parents' reasons for using technology and the meaningful experiences they have while teaching their children. Respondents are often limited in their responses to surveys, and underlying feelings, views, values, and interests are not often recognized through the survey method. Qualitative data were used to illuminate the quantitative results, thus ruling out validity threats by evidence that emerged from the data (Creswell, 2007; Maxwell, 2005).

Data collected by interviews add complexity to the reasons homeschool parents teach with technology, and extend meanings, attitudes, and reasons behind practices. To increase the validity of the study, data were collected and analyzed by a lengthy questionnaire (see Appendix C) accompanied by follow-up interviews, and member checks (Gibbs, 2007; Merriam, 2009; Walcott, 1994).

My interviews with the homeschool parents were comfortable and pleasant. Rubin and Rubin (2005) posit that through responsive interviewing, data collection can be an enjoyable and rewarding experience:

Our feeling is that responsive interviewing projects can be designed to provide a more immediate reward to the interviewees. The conversational partners should find the interview itself enjoyable and a time to reflect and draw their thoughts together. They should get a sense of being a crucial part of an important project that provides them with an opportunity to create and frame a legacy of some sort. (Rubin & Rubin, 2005, p. 101-102)

### **Ethical Issues**

Prior to the interview, each participant received a letter of consent and authorization stating that participation in the study is strictly voluntary and that the risk of participating is minimal. All names and identifying features have been changed to protect anonymity and ensure confidentiality. The study was submitted to the Human Subjects Committee—Lawrence and approval gained from the Institutional Review Board at the University of Kansas (see Appendix A). Only the researcher had access to the participants' individual data and collected data were stored on a secure, password-protected computer. Several interviewees asked questions about my homeschooling experience, my research, and my goals with the study. My honest answers to their questions sometimes extended the conversation, and as part of a debriefing process, I allowed interviewees to share further thoughts of their own experiences. This provided greater critical reflexivity for me to recognize biases and focus on the thoughts, feelings, attitudes, and actions of the participants. During the interviews, I made every attempt to see that the interviewees were at ease and as comfortable as possible. I also allowed participants to choose the time, and mode of communication (i.e., video-conference, in person, or E-mail) to conduct the interview. Additionally, interviewees were given the right to look over their interviews in



narrative form, edit them, and examine the final manuscript before publication, if requested (Rubin & Rubin, 2005).

### **Limitations**

This study does not intend to definitively establish how the majority of parents feel about using technology for homeschooling and its findings are not generalizable to the entire homeschooling population. Convenience sampling was used to gather data. The selection was not random, and the majority of respondents were from Facebook homeschool groups; therefore, the results of the study do not represent the larger homeschooling population. The home educators who volunteered for the study are highly educated, mostly middle-class mothers and nearly half of the home educators have been homeschooling less than three years. Furthermore, a large minority of the sample unschool their children, a method which often differs philosophically from traditional homeschooling. Beyond that, my own experiences with using technology in the context of homeschooling may have colored my perceptions of others' experiences. Additionally, my thoughts about the change technology has brought to homeschooling also influenced the way interview questions were formulated. To limit these potential biases, survey data, interviews, my field journal, and member checks were used for triangulation.

## **Chapter 4 Results**

### **Survey Results**

This chapter will discuss the results from the survey and substantive data discovered in interviews with the interviewees. The raw number of survey responses was  $N = 350$ . Of the 350 responses, 289 fully completed questionnaires plus 27 partially completed questionnaires were

included in the data for this study. To be included, the questionnaires must be at least forty percent complete. The total number of completed questionnaires was 316 ( $N = 316$ ). Descriptive data from the survey was integrated with interview data.

Additionally, the different instructional methods and varying reasons that parents have for homeschooling, as well as reasons for using technology as part of their homeschooling routine are also highlighted. Six broad themes are discussed, in addition to further reflections from the thirteen home educators interviewed. The congruent themes from survey data and interview data are presented by in-depth responses from interviewees. Finally, a summary of possible limitations within the study is included.

The home educators in this study are 97% female and 3% male. The majority of respondents are married (93%), Caucasian (90%) well educated, and in the middle to upper-middle class income bracket. Minority homeschoolers who responded to the survey self-identified as Asian (4), African American (8), Latino (4), Native American (1), Eastern European Jewish (1), and Multi-racial or Biracial (6). Ninety-two percent of home school parents surveyed were educated beyond high school.

Data were collected by convenience sampling allowing me to more quickly, effectively and cheaply gather a higher number of survey responses and find a select few interviewees via the Internet (Fricker & Schonlau, 2002). The results of the study reflect the nonrandom sample and are not representative of the entire homeschooling population. Of the survey respondents in this study, over 70% hold a 2-year college degree or higher, and over 58% have obtained a 4-year degree or higher, and 26% of those surveyed have either a masters or doctorate degree (see Table 3).

## Demographics

**Table 3. Survey Demographics of Home School Parents**

	N	%
<b>Gender</b>		
Female	293	97.0
Male	9	3.0
<b>Age</b>		
Younger than 25	2	0.7
25 - 34	57	18.8
35 - 44	162	53.5
45 - 54	71	23.4
55 - 64	11	3.6
<b>Marital Status</b>		
Married	282	93.0
Single	9	3.0
Divorced	8	2.6
Separated	2	0.7
Widowed	2	0.7
<b>Ethnicity</b>		
White/Caucasian	272	90.0
African American	7	2.3
Hispanic or Latino	4	1.3
Asian	3	1.0
Other	16	5.3
<b>Education Level</b>		
Less than high school	3	1.0

High school graduate	21	7.0
Some college	63	21.0
2 year degree	36	12.0
4 year degree	88	29.3
Master's Degree	60	20.0
Doctorate	9	3.0
Other	20	6.7

---

As part of the questionnaire, home educators were asked to rank or explain their reasons for homeschooling. Results showed the number one reason for homeschooling was dissatisfaction with traditional schools' academic performance, followed closely by concern about the environment of other schools. Nearly 58% of survey respondents picked these two choices as their number one reason for homeschooling. Desire to provide religious instruction was ranked third, followed closely by family bonding. When looking at the secondary reason for homeschooling, data show that concern about the environment was the most popular secondary reason, followed by family bonding. The most popular choice for the third reason for homeschooling was family bonding, followed closely by concern about the environment of other schools, and desire to provide nontraditional education. Data from interviews produced similar reasons and results, with nine of the thirteen (70%) interviewees listing family bonding in their top three reasons for homeschooling (see Table 4.1, 4.2, 4.3, & 4.4).

### **Reasons for Homeschooling**

---

***Table 4.1. Reason for homeschooling rank number 1***

---

Reason	%
Dissatisfaction with traditional schools' academic performance	29.3%
Concern about the environment of other schools	28.4%
Desire to provide religious instruction	18.3%
Family bonding	15.3%
Desire to provide nontraditional education	8.7%
Total	100.0%

---

**Table 4.2 Reason for homeschooling rank number 2**

---

Reason	%
Concern about the environment of other schools	28.1%
Family bonding	25.0%
Dissatisfaction with traditional schools' academic performance	21.9%
Desire to provide nontraditional education	16.5%
Desire to provide religious instruction	8.5%
Total	100.0%

---

**Table 4.3. Reason for homeschooling rank number 3**

---

Reason	%
Family bonding	29.7%
Concern about the environment of other schools	25.3%
Desire to provide nontraditional education	20.1%
Dissatisfaction with traditional schools' academic performance	14.8%
Desire to provide religious instruction	10.0%
Total	100.0%

---

**Table 4.4. Reasons for homeschooling ranked as 1, 2, or 3**

---

Reason	%
Concern about the environment of other schools	27.3%
Family bonding	23.4%
Dissatisfaction with traditional schools' academic performance	22.0%
Desire to provide nontraditional education	15.2%
Desire to provide religious instruction	12.1%
Total	100.0%

Eighty-eight parents (28%) chose to explain further their reasons for homeschooling (see Table 5).

---

**Table 5. Additional reasons for homeschooling.**

---

	N	%
Personalized Education	18	20%
Bullying	15	17%
Dissatisfied with schools	14	16%
Flexibility	11	13%
Learning Disability	9	10%
Ability to Travel	6	7%
Gifted	4	4%
Other	11	13%

Data show that parents from this sample perceive traditional schools not having an environment that is conducive to learning. Furthermore, these home educators believe that traditional schools

do not meet the academic learning needs of their children. The following Survey Respondents explain (verbatim) a few of the personal and unique reasons parents choose to homeschool:

SR 112: My child is African American. I wanted her to feel, Be [*sic*], and know who she is. Be proud of who she is. Especially in the early years. Therefore being emboldened, she can now, confidently navigate her world.

SR 299: Hoping to teach my child to think critically and learn at his own pace, as opposed to rote memorization and learning at the pace of 30 other classmates.

SR 248: The first was because he is dyslexic and I was determined to teach him how to read. One by one, my others begged to come home. They are gifted. They wanted to explore their own interests. We are atheists and homeschool secularly with an emphasis on rigorous, yet personalized academics.

SR 122: I honestly don't believe the government should have any part in raising and educating my children.

Similar and different themes emerged from the thirteen interviews (see Table 6). The themes substantiated the data from survey responses as well as introduced new reasons for homeschooling.

**Table 6: Themes from data of the interviewees.**

	N	%
Personalized learning	13	100%
Networking, support, resources	13	100%
Balance technology use	8	62%
Individual Creative Pursuits	8	62%
Dissatisfaction with traditional schools	6	46%

Family bonding	6	46%
Gifted	5	38%
Facilitated learning	5	38%
Cost and convenience	3	23%

---

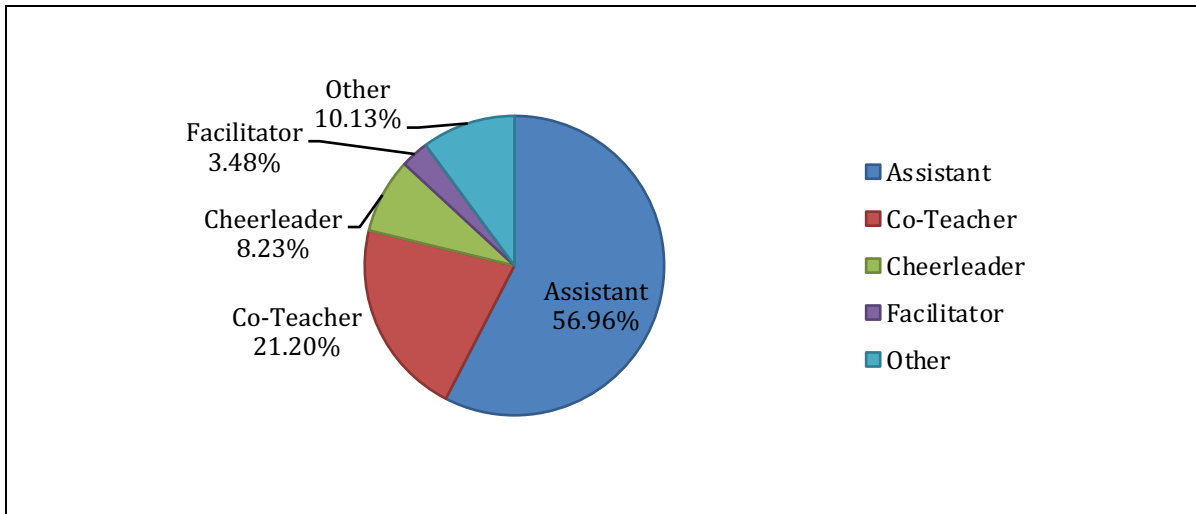
### **Home Educators' Views of Teaching with Technology**

The home educators in this sample who teach with technology see themselves as proficient users of technology (79%), and sixty-eight percent of parents agreed or strongly agreed that their child was also skilled in using technology. Seventy-one percent of parents in this study reported that their child has their own device (i.e., laptop, mobile phone, tablet, etc.). Eighty-five percent of these home educators said that monitoring and regulating their children's technology use is important. Technology is often used for schooling and homework, and 75% of respondents encourage their children to use technology for school projects. Many home educators use technology for networking with other homeschoolers. Ninety-six percent of parents in this sample reported that they use social media platforms such as Facebook, Instagram, and Twitter.

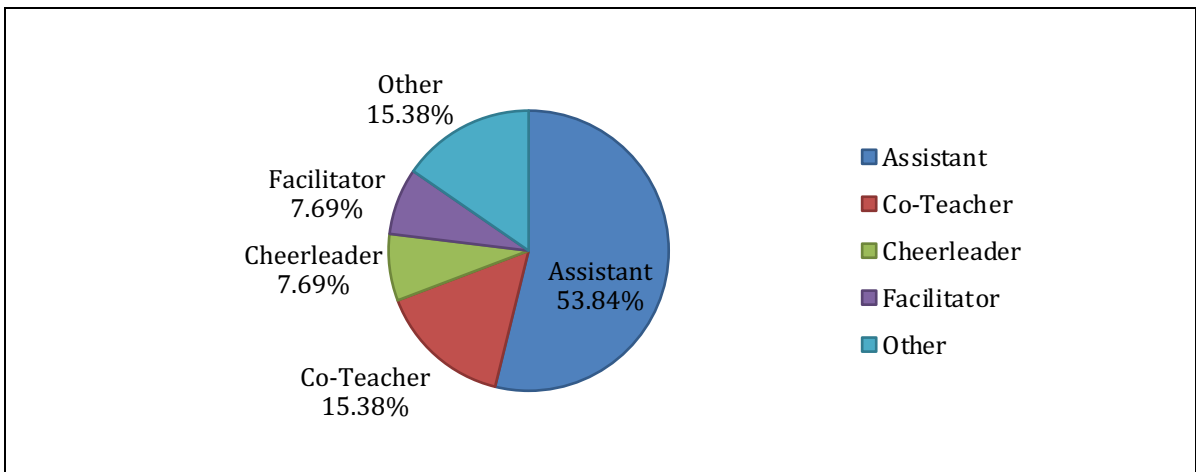
On the questionnaire (Question 14), parents were asked to choose a statement, or explain in their own words, how they see themselves as teachers when using technology for homeschooling (see Appendix C). The choices were: 1) I am the teacher and technology is my assistant; 2) Technology is the teacher and I am the facilitator; 3) Technology and I are co-teachers; and, 4) My children use technology to teach themselves and I am the cheerleader. Statistics show fifty-seven percent of the respondents said that they see themselves as the teacher and technology assists them in teaching. Twenty-one percent see technology as a co-teacher.



Eight percent believe their children use technology to teach themselves and see themselves as a cheerleader, and three percent said that they see themselves more as a facilitator while their child learns primarily through technology provided instruction. Interview responses were closely aligned with survey data (see Figures 1, and 2).



**Figure 1. Survey data how home educators see themselves as teachers using technology.**



**Figure 2. How Interviewees see themselves as teachers using technology.**

The following statements are examples of parents' feelings and perceptions by Survey

Respondents:

SR 197: As an unschooler the children follow their passions, often via technology, and I facilitate extensions to that information, offer ideas, extend discussions etc.

SR 149: Technology allows us to answer questions faster, capitalize on teachable moments, dig deeper, and take advantage of what is around us by providing instant access to information we might not otherwise have. It helps us find interesting experiences and places while traveling. We love research, and technology gets us started.

SR 143: Technology is a useful tool at an appropriate age.

Ten percent of homeschool parents chose to explain in their own words they how they perceive teaching in relationship to technology use in their homeschool. A few respondents replied:

SR 286: The relationship with technology is different for each child. For the oldest, Technology is the teacher. For the others, Technology and I are co-teachers.

SR 239: A cross between technology and I are co-teachers and my children use technology to teach themselves and I am the cheerleader.

SR 283: Sometimes I use technology to facilitate, sometimes my kids use technology to teach themselves.

SR 94: We are only in year two of homeschool ~ last year they did not do any online classes. I think it will increase over the years - I will let someone else teach the lesson, then I will help with assignments and projects.

Of the home educators that were willing to respond to the survey ( $N = 316$ ) and twelve of the thirteen interviewees who volunteered for this study, more than ninety percent use technology for networking, support, and/or gathering resources in order to provide personalized learning at home. Coding and comparison analysis of the thirteen interviews produced additional

data revealing that technology is used in some homeschools to promote children's individual creative musical and artistic talents.

According to the survey results, dissatisfaction with traditional schools' academic performance was the top motivator for parents to home educate their children (see Table 4.1). Data from the interviews strengthen and illuminate data from the survey. Explanations by interviewees revealed various misgivings with public schools:

Catherine: There is too much standardized testing. I want my kids to grow up loving learning and valuing education. It felt like public schools were interfering with that.

Maggie: So much time is being spent not educating the students but in training them. I don't want to deal with the bureaucracy. And it's a broken system. In spite of the fact that I do believe teachers really are trying, for the most part—it's a broken system.

Anne: With a one-sized-fits all teaching approach they do try to just teach basic facts and fill children with information rather than training children to discover, think for themselves and follow their own pursuits.

Rose: African American boys tend to get tracked.

Lydia: My husband and I felt like we were losing him in the school system. We didn't even think he'd get through high school.

Jessica: There was so much busy work and lack of opportunities for student initiative that we decided we could do a better job of educating on our own.

### **Most Satisfying Part of Using Technology**

Home educators were asked what they felt was the most satisfying part of homeschooling with technology. Many responded that they personally could not adequately teach their children all school subjects, but that they accessed what they believed to be higher quality curriculum and

teaching using qualified teachers through online programs. Others mentioned that technology allows for a more engaging and personalized education. Many parents who unschool communicated that technology allows their child to initiate learning independently, on the child's developmental level, with fun and motivating computer activities. Several of the survey respondents, including two interviewees, said that they see technology as a tool for quick and easy access to information on the Internet, for networking, for support, and for the benefit of record keeping. Survey respondents shared:

SR 93: I started with a boxed curriculum that was basically a series of workbooks. Blogs about homeschooling and various curriculum choices made my approach much more eclectic within just six months or so. All of my homeschool community is virtual.

SR 95: I use the internet to research topics to teach, specifically how to write essays for my high schoolers so they can look it up and remind themselves if they forget. I also use YouTube for science often.

SR 311: Originally, I never considered using online courses. I'm a teacher by training & actually started my own private school. So of course, I thought to myself, I will be the teacher in our homeschool. But I really overestimated my kids' willingness to be model students for their mother. They really avoided doing work, a lot of complaining & excuses. After 5 months of feeling we were not accomplishing enough, I signed them up for online courses. And it is going really well. More entertaining for them, less frustrating for all of us. We use online classes for about 25% of their work.

SR 193: The use of the Internet and information has had a huge impact on teaching. The ability to use one to one tutors via Skype where ever they/we are opens up a huge number

of learning opportunities. Online schooling is so flexible and again opens up new opportunities to access specialist teachers, especially for older children.

### **Challenges of Using Technology**

When asked about perceived challenges of using technology in a homeschool environment, respondents said that controlling the amount of time their children use technology was important to them. Many parents expressed concern over the inability to control unwanted images, unreliable information, and Cyber-safety. A large percentage (85% of parents in this study) regulate or monitor their children's use of technology and strive to create a balance of physical exercise and mental stimulation, sometimes struggling to steer clear of distractions and technology addiction. Several parents reported that technology use sometimes interferes with teaching, because of device troubles, connection issues, spotty Wi-Fi, or having to share devices. A few parents felt that they battle the temptation to rely too much on technology or are overwhelmed with the amount of available information. Others believe that they and their children tend to use technology too often. Survey data revealed:

SR 271: I find that my children would spend all day on screens if allowed to do so. I have many conflicting feelings about this, and don't necessarily want technology to take over every aspect of our lives.

SR 132: He likes to do work from his bed, which is hard to regulate.

SR 159: I find too much time with technology makes my kids moody and apathetic. I want them to be able to write with a paper and pen and be able to play with tangible objects for as long as possible, but I also understand they need to be technologically fluent.

SR 210: I want my children to be homeschooled not computer schooled. The computer program we are using is not interactive.

SR 312: It causes a disconnect from reality, it can get in the way of more beneficial, healthier learning experiences. (Exploring outside, being bored, creative exploration and play, etc.)

SR 240: Often the desire to use technology is so strong it can become addictive and the children don't want to experience more face to face ways or outdoor ways of learning and experiencing things.

### **How Technology Has Changed**

When asked how technology use has changed in their homeschool, responses ranged from a definite increase, to a more personalized curriculum, to using it more as the children mature, to no change or less use. Fifty-five percent of parents surveyed ( $N = 270$ ) said that they increased technology use over the years especially as the children matured. Others commented that they expect it to increase as their child progresses in school. Seventeen percent said that technology use has become more child-directed. Reasons given for the increased usage are availability of devices and better programming (36%) and more than one-quarter of respondents said that they use the Internet more now for research. Thirty-one percent reported they are either in their first year of homeschooling and/or nothing has changed.

Eight percent of the respondents said that their technology use has not changed or that they use it less. Many parents reported that technology use increased with easier access, more choice for devices, and better programs. A few parents reported allowing their children to use technology, so that they could “get a break” from being with the children all day. The most

common response given by parents in this sample was for their children to use technology to learn what interests them. Home educators explained:

SR 192: The ability for my child to self learn at his own pace. He really thrives when he is engaged with educational apps and in control of his own learning. He has progressed in areas such as maths [*sic*], English and coding above and beyond expectations of the NC. [National Curriculum in the United Kingdom]

SR 114: While I don't think that technology is necessary to the homeschooling experience, I do believe that it is a great time saver and allows my child to cultivate independence. In a world where technology is everywhere, I feel that my child needs computer skills to be able to keep up with and advance in any career he chooses.

SR 44: We use technology to extend learning and collaborate with people abroad. It is satisfying to see our child using tech with confidence. We are aware that digital literacy is paramount in today's education. So we guide her towards making a safe and critical use of technology.

The final open-ended question on the survey allowed parents to share further thoughts and reflections about their experience with technology and homeschooling. Significant themes that emerged from the data were: 1) *quality education*; 2) *quality teaching*; 3) *support for homeschooling*; and 4) *technology is not always needed or desired*. Some respondents see quality education as the choice of programs available for students with special needs. Others use supplementary materials to support their curriculum and believe that using technology as part of their homeschooling routine promotes technology literacy.

Many parents expressed gratitude for the ease, convenience, and availability of technology. Several respondents explained that technology assists them to network, draw nearer

as a family, and access fun and engaging learning games that did not seem like “school” to their children. Several parents mentioned that technology is not always welcome due to the risk of technology addiction, Internet safety issues, and the time and energy it takes to regulate use.

Examples from respondents are:

SR 292: I originally wanted to limit screen and didn't think I wanted to use it too much. Now I feel like technology is vital to our homeschool. I don't know what I would do without it.

SR 198: The breadth of subject areas available & the depths a child can enter into a subject they are interested in. Filling the gaps in my knowledge & the different media that can be used, I feel this leads to a more 3 dimensional education.

SR 192: The Internet allows our son to learn about things within the wider world that he wouldn't learn within the school environment. It allows our son to learn at his own pace and he has no fear of getting it wrong as he knows he can just try again. He doesn't feel pressured into getting it right. My son is reluctant to write but he loves using the Apple Pencil on the iPad. The writing apps mean that he can't just scribble as he pleases so it is helping him with his letter formation in an enjoyable way.

SR 269: We wish more than anything that Google Classroom would be fully available to homeschoolers. I use it for homeschool planning and it's great, but wish the entire educational suite was available to homeschool families.

SR 209: I think conventional schools teach tech in a very non-intuitive way. Her schooled peers are creating powerpoint presentations aged 10 in some well-intentioned but misguided understanding of prep for the workplace (or that's what I assume, it seems pretty random to me) and I don't feel teachers are even competent or supported enough in

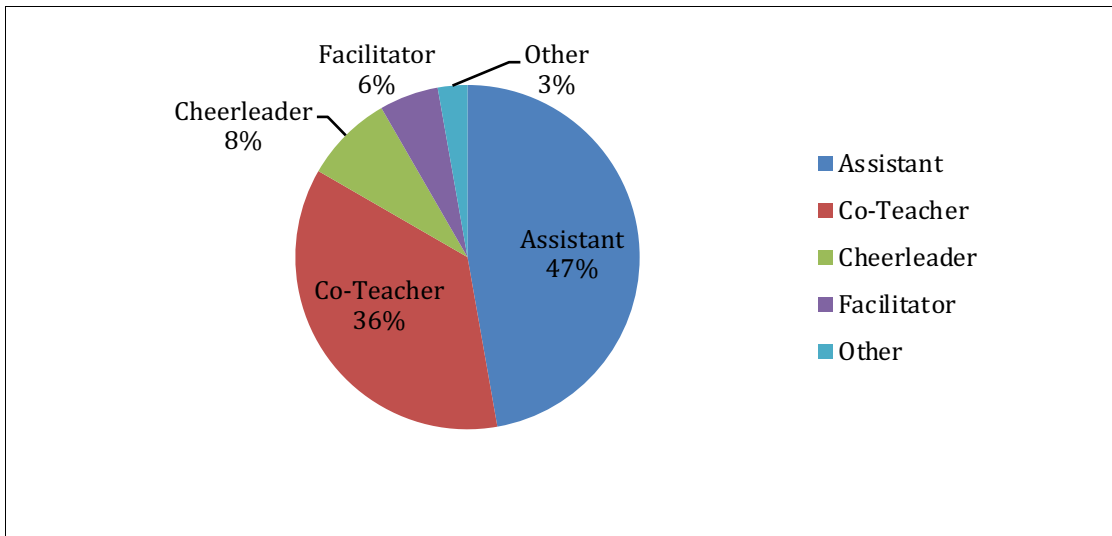


general to do this. kids pick up tech really quickly, they just need to be given a pointer and boundaries (online safety etc.)... homeschooling use of tech is much more intuitive and based in our kids' real-life needs and that will make them more proficient tech users as adults/employees.

### **Teenagers New to Homeschooling**

Some teenagers are withdrawing from conventional schools in the middle of their schooling career to be educated at home. An unexpected result of data from the sample in this study show that of those home educators new to homeschooling a sizeable minority are homeschooling teenagers in grades 7-12. Data revealed that nearly half ( $n = 150$ ) of the home educators in this study have been homeschooling for 3 years or less. Roughly one-quarter of those parents fairly new to homeschooling ( $n = 35$ ) are homeschooling teenagers in grades 7-12. Although small in number, and limited only to home educators in this study, this finding is interesting because home educators typically enroll their children in public schools at junior and senior high grades when the curriculum becomes too challenging to teach.

Data from the home educators in this sample show that parents new to home education who have children in higher grades ( $n = 54$ ) perceive themselves more as a co-teacher when teaching with technology. There is also a slight increase in perception as a facilitator (See Figure 3). These results suggest that parents who are less comfortable teaching higher level curriculum use technology more or allow technology to become the teacher while they take a more supportive role. I speculate, based on the questionnaire responses and interview data, that these parents' perceptions may be due to homeschooled teens actively directing their own education with available technologies.



**Figure 3. New home educators' perceptions of themselves as teachers homeschooling children in higher grades.**

A large number of home educators in this study are middle-class and well educated. Sociologist, Annette Lareau (1996) who studies parents' involvement in their children's education, finds that better educated and middle- to upper-class families tend to be more involved in their children's education than are working class and poorer parents. Lareau says that working class and underprivileged parents often turn over responsibility for education to the school while middle-class parents see themselves as having a shared responsibility for the educational process (p. 64). Lareau's insight might also inform my study.

The college educated parents in this study appear to approach teaching differently, viewing themselves as "conscientious cultivators" of their children's knowledge and skills. These parents seem intent on playing an active role in teaching their children, using technology mainly to supplement instruction. Parents who are less educated, however, may trust technology to do more of the teaching, giving over the responsibility for their children's education to teachers online or in virtual schools who they perceive as more competent.

While analyzing the responses to the question of how home educators see themselves as teachers when using technology, I wondered whether college educated parents use less technology for teaching than those less educated; that is, do parents with a 4-year degree or higher view technology more as an assistant when teaching compared to those parents with less than a 4-year degree who see technology as co-teacher or as the primary teacher, while they act as cheerleader or facilitator. To explore this hypothesis, whether better educated parents use less technology when homeschooling, a Chi-square test was performed:

$H_0$ : There is no significant association between parents' education level and their use of technology for homeschooling.

$H_a$ : Better educated parents use less technology for homeschooling.

Within this sample, results were not statistically significant,  $\chi^2 (1, N = 250) = 0.19, p < .05$ , and the null hypothesis is accepted that there is no significant association between parents' education level and their use of technology for homeschooling (see Table 7).

---

**Table 7. Testing the relationship between education level and technology use.**

---

		Education Level		Total	
		$\geq 4$ year degree	$< 4$ year degree		
Technology Use	Less Tech	Observed	92	65	157
		Expected	87	70	
More Tech		Observed	47	46	93
		Expected	52	41	
Total			139	111	250

Finally, some home educators had mixed feelings about technology, and reported that it was not needed or desired for homeschooling:

SR 215: Technology doesn't satisfy any of us for schooling. We use it largely for entertainment, research, and for math instruction.

SR 248: My daughter started high school this year and requested mainly online classes. She prefers routines and schedules. She also likes to explore her own interests online. Other than freeing me up, I don't find it very satisfying. I would rather engage with her like I did with her brothers.

SR 110: I use less than the school district did. I might have a math lesson introduced and some practice. Then I take it further with my own projects that are nontechnology based. My child spent HOURS on the iPad at the school and then homework was done on the iPad as well. No paper / pencil. My child gets headaches with so much use of electronics. Often technology was assessed rather than the actual learning...hence the departure from the school district.

### **Interview Results Converged With Survey Results**

Of the home educators sampled in this study ( $N = 316$ ) the top three most commonly cited reasons for homeschooling are: 1) concern about the environment of other schools; 2) family bonding; and 3) dissatisfaction with traditional schools' academic performance. These results are unique to this sample as over one-third of the homeschool parents use *unschooling* as their primary or secondary method of schooling. Unschooling is letting the child lead and contribute to her own education through interest-led learning suggesting a close familial relationship between caregiver and child. Interviews with Lydia, Catherine, and Maggie provide some insight as to why parents sometimes feel they need to take their teenagers out of school:

## LYDIA

Lydia was a certified teacher in a nationally recognized, award-winning school district. She has a B.S. in Education and her husband has a Master's degree in Education. At the start of our interview Lydia quoted Mark Twain, "Don't let schooling interfere with your education," and explained how pulling her sons out of the public school was the absolute best choice for them.

At first, educating their sons at home seemed "wrong" as if it went against what they had learned as educators. "But [homeschooling is] what we decided because we felt like our kids are not going to make it; and maybe the public school system *is* failing them."

An interesting aspect of Lydia's experience is that her boys began learning at home at the ages where many homeschooled teens make the transition from home education into public school. Because their first son was already mid-way through high school, they used traditional curriculum, combined with unschooling, and added some classes at the local junior college. In time, technology became an avenue for curriculum planning and, eventually, for instruction. Lydia described her curriculum and instruction as a mix between an "official curriculum" and "whatever works for Shane (pseudonym)." Her son's homeschooling consists of taking online classes and watching educational videos online. Lydia voiced her belief that technology supports her family's "learning-all-the-time" attitude toward education. The more she thought about teaching with technology, Lydia decided that she is both facilitator and cheerleader while her sons learn something new with the assistance of technology.

One benefit Lydia sees with technology is the deepening of family relationships. The ease of looking up facts together on the Internet, while nourishing their curiosity, has also led to family bonding. Lydia explains how she saw the personal needs of her son and helped him

achieve those needs. As she explains the way she teaches, it seems the relationship she has with her sons is close and respectful:

Carlton (pseudonym) has always been a researcher; and we're a family of information seekers. So if we want to know anything we'd just ask [him]. But Shane had no idea how to research. Once, I realized that he wasn't trying to get out of [doing his] work, but didn't really know what I meant [*sic*], that's when I spent a lot of my time helping him learn *how* to find information. Now he knows how to find his own information, anything he wants to know. That was important to me, because then you can learn anything you want.

#### CATHERINE

Catherine is not a “typical homeschool mom.” She is also an attorney-at-law. Her two children are in 5<sup>th</sup> and 7<sup>th</sup> grade, and her family is in their first year of homeschooling.

Catherine’s primary reasons for homeschooling are to provide a nontraditional education and to give each of her children a more individualized learning experience.

The large class sizes in public school meant that her daughter, a creative and independent learner, had little control over how and what she was learning. Catherine’s son wanted to take advanced mathematics and science classes, but in order to do that he had to enroll in the higher track for all of his classes. For both her children, public school failed to give them the appropriate education they needed. Catherine feels that public schools today have too much standardized testing, and teachers are often teaching to the tests.

Catherine sees technology acting as a co-teacher in her homeschool. She explained that even though her children watch online educational videos most days, and take Spanish and typing online, she does not want the majority of their education taken on the computer. Both of Catherine’s children love acting and film work, and have considered the idea of making their

own educational videos of what they are learning. She believes this project-based learning is a better way to master material, as opposed to rote learning and memorization of facts. Catherine also believes that technology provides her children with a more engaging and interactive way to learn. She thinks that the educational videos she finds for her children do a better job explaining topics in a more interesting and engaging way. While her children will receive lessons using online technology, Catherine is also intentional about following up with one-on-one discussions, and supervising their online activities:

I don't think my kids would get as much out of it if they were left alone with a computer all day. But I also think my job would be much more difficult (and I likely wouldn't homeschool) if there weren't so many online resources available. I also couldn't imagine homeschooling without Amazon - it makes it so easy to get the books, games, and projects I need to keep us learning.

## MAGGIE

Maggie and her husband used to be English teachers at a small public school. But in the spring of 2011, they began to “feel the pull” to homeschool. They withdrew their two boys from the local public school in the middle of their 3<sup>rd</sup> and 7<sup>th</sup> grade years. A primary motivation for homeschooling was to become closer as a family. Both she and her husband were overcommitted with responsibilities at the school, and although they spent nearly the entire day together they felt like they were not getting quality time together.

As a new home educator Maggie quickly embraced the advantages and the efficacy of providing a “richer education in a shorter amount of time.” By the early hours in the afternoon they were finished with schooling, chores, and extracurricular activities, and had plenty of time

to explore personal interests and enjoy family activities. She was convinced that homeschooling was her new calling:

Seeing how home school worked and then still having friends in the public school system, and watching the news and seeing all of the stuff coming down from the federal level influencing the public schools, it didn't take long before I [had] no interest in going back. I don't want to deal with the parents. I don't want to deal with the bureaucracy. And it's a broken system. In spite of the fact that I do believe teachers really are trying their best, for the most part—it's a broken system.

I asked Maggie: What do you teach using technology that you could not teach without it? She stated:

Definitely the math! The instructors are teaching the math concepts. We didn't order frogs or fetal pigs or anything, so being able to virtually do those. Yeah, I could not have done math and science without the technology for sure. The foreign language... [She paused to think.] I have high school and college credits for German, but I'm not fluent in it. So definitely couldn't have taught foreign language without some technology.

As thankful as she was for the assistance of technology, it was clear that Maggie did not want to give over too much power to technology. She was tempted by the quality of materials but she wanted to be more involved in her children's education. As a final thought, Maggie shared how she wants her children to have strong technological skills, but to also be aware of potential harms overuse may produce:

When I consider a technological component for their education, I run it through this grid-

- A goal I have for them is to be *thinkers* and *communicators*,  
not *consumers* and *producers* of information. If the use of technology will *aid* in



achieving that goal, then I'll use it. If it's just a user-friendly, low-maintenance tool to help them regurgitate information or consume it in an entertaining way, then I shy away from it. It's a grid I would hope any true educator would consider when choosing technology. I think this generation needs that kind of guidance, even if it costs us ease.

Maggie's story highlights Dewey's view that education "is the most personal, the most intimate, of all human affairs, there, more than anywhere else, the sole ultimate reliance and final source of power are in the training character, and intelligence of the individual" (Dewey, 1903, p. 198).

### **Independent Learning and Technology as a Tool**

Several home educators view technology as a tool that assists them in finding curriculum. Moreover, these parents believe that technology assists with independent learning, permitting children to explore their own interests. Several parents communicated by survey, and by interview, the joy of seeing their children actively using technology in order to explore their interests. Additionally, homeschooling for familial closeness is seen once again in these interviewees' recounted experiences:

#### **JULIA**

Julia homeschools her 4-year old son, yet he is not an average 4-year old. It is difficult to say what "grade" he would be in because he is reading, writing, and working on science concepts that are usually assigned in high school. Julia's son enjoys technology and she allows him to access his educational apps anytime he likes. He is fairly independent while using technology. From her wide smiles during our interview, it is easy to see and hear Julia's sense of joy when watching her son engaged in learning:

He has a small phone that he uses with a small camera on it. And he does a diary of his day, and we print off the photographs. He'll put them in order of what we did that day, and he loves that! And it's amazing to see the world through his eyes, and what engages and interests him.

On her survey Julia mentioned using the Apple iPad for her son to practice his writing skills. During the interview, she went on to explain how interactive the iPad can be with Osmo, an application that connects technology directed activities with tangible objects. She explained, “It’s bringing technology into the real world as well, because he's got something tangible that he can move about. So all this new technology is bringing even more into his learning.”

Julia explained that her son is a motivated learner because he has not been “disengaged by the school system.” She sees his peers “switched off from learning” due to the controlled environment in public schools in the United Kingdom. On her survey, Julia shared that in her homeschool she takes the role as facilitator allowing technology to do the teaching. She explained further:

I see myself as facilitating his interests and showing him a way to gain more information. He’s doing things that are sort of way in advanced of what he would be taught if he was in a school. I see him as being in charge of his own learning and dictating what pace *he* wants to go at, where *he* wants to go, what his passions are. And I want him to develop as a whole person. So he can decide what his strengths and weaknesses are and the kind of thing that makes him happy. Because, I hope that by following his passions he’ll end up in the job that he enjoys—something that he's good at, because *he* wants to do it. So, I suppose I see myself as more the facilitator because I make what he wants to do happen.

Part of the reason Julia uses technology and perceives herself as facilitator is that she senses technology gives her confidence and assurance that her son is learning with her assistance and the quality educational materials that she locates online:

I think that's another positive [of technology] as well, because I don't *have* to know everything. I don't have to retain all the information. If I'm not sure, I can double-check it. There's programs that will teach them; so, you don't actually have to teach anymore.... I think a lot of people are daunted by home education, because they think that they're not smart enough or that they don't have the right qualifications. And really, all you need to do is have an interest in your child and give them access to the things that they need—and they will do it themselves.

#### ABIGAIL

Abigail and her husband are both second-generation homeschoolers. Having been homeschooled, they always figured that they would homeschool their children, too. Abigail's mother followed the recommendations of homeschooling pioneer John Holt who encouraged parents to allow their children to direct their own learning. Abigail says that homeschooling was the best gift her parents ever gave her. She was very close to her parents and her brother, and always enjoyed their company. Abigail's reason for homeschooling is to have that same closeness for her family while providing a nontraditional education for her children.

I asked Abigail how she used technology to homeschool her children. She responded, "Technology is one tool among many everyone in the family uses in life-long learning." Both she and her children use Khan Academy, an educational organization and website that produces education tutorials using short videos. She explained that her kids are learning with Khan

Academy, and they enjoy it. Abigail recounted how her son's enthusiasm for a subject was captured with the help of technology:

He wrote his first long, essay-type story, on my phone on the way home from a vacation—about his Dungeons and Dragons character. So this is what I love about homeschooling. He went from [writing] maybe one or two sentences, ever, about anything, to a three-page story with a transition because he was ready, and he had something to say.

...The use of technology there was helpful because it allowed him to write rapidly at a time when his intellectual development had outpaced his physical development ([hand] writing was too cumbersome for him, because his fine motor skills were significantly behind his storytelling skills). So instead of getting frustrated or having to rely on an adult to transcribe his thoughts, he was able to write the story himself.

Abigail mentioned a book by Salman Khan, the educator, entrepreneur, and founder of Khan Academy. She was reading it around the time that she saw my survey and had been thinking about self-paced learning. Abigail highly recommended Khan's book, *The One World Schoolhouse: Education Reimagined*, stating, "It explains how technology can be used in a global education, to make it so much easier for everybody to learn things. And that's why we started using his programs."

### **Satisfying Aspects of Using Technology for Homeschooling**

Homeschool parents reported the most satisfying aspect of technology use for homeschooling is the quick and easy access to information, the ability to research broadly and in depth and enabling their children to engage in independent learning. Long time homeschool parents, Sylvia and Deanna, explain how they see technology as valuable to homeschoolers:

## SYLVIA

Sylvia has been homeschooling for nearly twenty years, and she can almost see the finish line. Three of her children have already graduated, and Sylvia now homeschools her youngest daughter, a middle school student who is constantly on the go. The primary reason behind Sylvia's choice to homeschool has been to fine-tune educational choices to meet each child's individual needs and strengths.

When describing technology use in her homeschool, Sylvia sees herself as the teacher in charge and technology as the assistant. She believes technology is a benefit for teaching, for finding and preparing resources, and for aiding ongoing professional development. When asked about the assistance part technology plays, she replied, "I think it comes down to decision making. *I can choose where my student uses the technology, in which subjects, where she or he needs help, and which subjects are most beneficial for any particular child's particular learning style.*"

As a veteran homeschooler, Sylvia has watched many families embrace the changes technology offers. But not every part of teaching with technology is coveted:

I have noticed a trend in homeschooling families towards more self-guided education as computer based offerings become available. In some cases this seems good for the student. In others, it seems to reduce the actual one-on-one time a parent spends working with his/her child, which seems counter to my own personal feelings about the mentoring and tutorial aspects of home schooling.

I asked Sylvia to explain how technology fits within their homeschool environment. For her, homeschooling is family-oriented; and there are many purposes and preferences for using technology. They often use technology for academic purposes, for research, and to connect with

others socially. While Sylvia's family uses technology in each of these areas, it is all used and evaluated in different ways, she explained:

I would venture to say, for some families in remote places, or not otherwise connected, that social media is not frivolous; it's a true need. But I make more hard and firm decisions about the academic use of it than the recreation use of it. I still try to teach my kids to be discerning, but technology helps me to provide individualized education according to the need of my child. It also assists me in being organized about what I'm going to do.

At the end of the interview, Sylvia shared the most obvious way she has seen technology completely evolve for homeschoolers:

In the early days of home schooling, fewer curriculum options were available. You might see a hard copy if you went to the annual homeschool curriculum fair, or if a friend had a copy. Otherwise you went by the description in the seller's catalogue and crossed your fingers it would actually be a good fit. It wasn't uncommon to have to purchase two or three different products before getting your hands on the one that best suited your own family. Now, thanks to technological advances, a buyer can easily shop online, viewing tables of contents, sample pages and even download products for immediate use.

Advances in communications technology have also enabled many parents and teachers to develop, publish, market and distribute new curriculum offerings, vastly increasing the options available.

## DEANNA

Long-time home educator, Deanna, has homeschooled four children over the course of twenty years. She sees technology as an "assistant" in her home school:

My children can do things that I can't do. I don't know...almost makes me...well, maybe I *am* a co-teacher with it [laughter]. Because, if you think about it, we live far away from grandparents, but my kids can crochet and knit and paint; they can do all these things that I can't do...Nowadays kids can go online, look at something, figure out how to do a craft, to be crafty, to be creative.

Deanna struggled to define the relationship she has with technology:

Maybe I just don't like the idea that technology is... I just don't want to say technology is ahead of me! But I guess more and more, you know? [She says smiling.] So, if you think about the different ages of my children, when they were young—I'm definitely the teacher. And when they move into higher-level classes, or things maybe that I don't feel like I'm the expert in something, then I send them to a special tutor or a special class. ...It's still not the technology. It's someone else—the expert! So that's why I would probably say technology is the assistant.

### **Technology Use and Well-Being**

After further analysis of survey responses, additional concerns surfaced regarding how technology influences the emotional and mental health of homeschooled children. Twenty-three percent of the parents surveyed said that they limit their children's time on devices to control overdependence and abate addiction. The following is a list of quotes from parents surveyed:

SR 279: I struggle with limiting it. Technology is going to be a huge part of my children's entire lives and they need to be fluent in its use. On the other hand, I also need them to be able to look someone in the eye and carry on a conversation.

SR 159: I find too much time with technology makes my kids moody and apathetic. I want them to be able to write with a paper and pen and be able to play with tangible

objects for as long as possible, but I also understand they need to be technologically fluent.

SR 271: I find that my children would spend all day on screens if allowed to do so. I have many conflicting feelings about this, and don't necessarily want technology to take over every aspect of our lives.

SR 226: I want to be involved in their education. If I wanted them hooked up to a screen multiple hours a day, I'd just send them to public school. We also highly regulate the Internet in our house.

SR 247: Keeping everyone safe and secure. I worry about this because my children know more about technology than I do.

SR 36: Keeping the children safe online is my highest concern so we tend to use technology as a family activity.

## ERIN

Erin has strong feelings when it comes to technology. Both of her children were given cell phones, but her son lost his; and, her daughter either rarely uses her phone or will forget to pack it while they are traveling. Erin says she has a gut feeling when her children are spending too much time on technology. She explained:

We tried Minecraft when we were living in Bahrain, about three years ago. I had heard much of its educational value so thought I'd try it. The children played for about 45 minutes and immediately afterwards my son (who is never interested in technology of any sort) asked me when he could play again. I sat with a cup of tea and thought about his reaction, and his slightly manic desire to play it again, and I decided to delete the game. My son (now 11) is very calm and chilled out so if he was that desperate to keep playing,



I figured it was probably a bad thing. Again, more of an instinctive than a rational response! ☺

While Erin is vigilant to regulate technology use, she also recognizes the benefits of technology for differently abled learners:

My daughter (nearly ten) is dyslexic and very much a visual, kinesthetic learner. For years I held off on using technology within lessons but she so clearly learns and retains more knowledge that way, that she tends to use screen-based learning primarily now.

This amounts to about five hours a week screen-time. ...

I allowed the children to watch a fair bit of television when they were under 5 as they are close in age (18 months apart) and it was that or sending myself a bit crazy [she chuckles] so they watched about two hours a day, no apps. ... When they reached about 8, 9 years old, I suggested a regular weekly app time (for non educational games) of 45 mins. I then upped that to two a week about a year ago (ages 9, 10).

Erin uses technology as an “assistant” as she homeschools. She uses the Internet when she cannot teach a particular subject or concept. For example, her son studies mathematics above her knowledge level, and Erin either prints resources from websites or they will watch a YouTube video and try to work out the questions together. She also uses videos to supplement lessons, in subjects such as Sociology. After viewing a video they have a discussion and her son will answer comprehension questions.

Other times she may use technology as a “co-teacher” for teaching a concept while she adds hands-on activities. For example, her daughter may watch a video lesson about spelling with silent letters, and after viewing the program, Erin will make paper letters to rearrange and spell words on a table. Then her daughter will return to the computer to finish the lesson.

Still, Erin prefers books to computers. During one of their travels, the only resources available were a small television, a few books, and a blackboard easel. Her son happily learned mathematics that year, and technology was not at all missed. She stated:

Technology wasn't there or needed and maybe that's why I don't see it as important. Once you realise you don't need it, you tend to only use it as a supplement, if at all. If I can't do something, and technology can, I use it. Otherwise, I don't, is my general rule of thumb.

Using technology has also assisted Erin's daughter with her creative writing. Erin will type while her daughter dictates stories which helps encourage her creativity, and organized story-telling, without causing anxiety of having misspelled words. As her daughter matures, Erin plans to help her daughter increase her typing skills.

Some advantages to online activities that Erin has noticed is whole-brain development through mental, physical, and emotional learning. "During most learning online, my children have to engage actively, not just pen to paper, but clicking the mouse, moving the cursor etc. More parts of their brain are firing at once which allows more chance of varied recall."

Erin continued this thought about computer programs and student engagement:

The other thing I will say is that I think online learning engages all learning styles instantly. I always tell my husband (who is a computer science teacher) that his work is a doddle because he's got flickering screens to keep their attention [adds laughing emoticon] and this is only partly a joke! The colours and movement on a screen can engage attention and sometimes this is all that's needed to get the child learning.

Erin spends quality time with her children while they complete school lessons online. Observing their attitudes and actions while using technology has helped Erin realize what works and what they need to do differently. For example, she has noticed that her daughter's math

program does not drill the student with dozens of problems to work during a lesson. It may only ask the student to complete 10 addition sums. While this seems an insufficient amount of practice, Erin reflects that when she teaches her daughter 10 math problems, the time is often much longer and is filled with complaining and grumblings. With the computer program her daughter would do all of the 10 math problems correctly and without the negativity, making both her and her daughter's day more enjoyable.

Although Erin does not want technology to replace her as teacher, she sees clear benefits of teaching with technology when compared to traditional lessons:

The visual stimulation is missing and always will be from a traditional lesson.

[Traditional education is] a different pace, different focus, different format. The lessons are quieter, slower, yet more focused on purely learning. This has the benefit of achieving the learning outcome in a fraction of the time but it may not be retained or even fully absorbed because my daughter's not engaged. It's hard to enthuse a child about a page of maths when they've spent half an hour fighting dragons with maths spells online.

On the other hand, Erin's son has not had the same positive experience with online math programs. While he liked playing games, the design and overstimulation frustrated him and Erin decided to stop using online math for his learning. Her son learns differently from her daughter, and planning curriculum and instruction for each child, individually, is a consideration:

Invariably, he will choose his textbook though. My son, having done some online learning, has a completely different reaction than my daughter though, and re-engages with 'traditional' lessons like drinking water in a desert. ☺ You can practically see his body relax and his mind settle into the quietness and calmness of a textbook and worksheet.

At the end of the interview, Erin summarized her thoughts about the different ways children learn. Her biggest worry about technology use in schools is that learners, such as her son, would have to engage in online learning whether he preferred to or not. She sees this similarly to how her daughter, twenty years ago, would be forced to use pen and paper for learning when computer programs seem to work better for students with dyslexia. The freedom to choose how to fine-tune learning for her children is why homeschooling works for her family.

### **Social Networking, Support, and Resources**

All but one of the thirteen interviewees use Facebook for social support and networking. Some interviewees regularly participate in conversations with Facebook members, and others use Facebook more for purchasing curriculum, gathering new ideas for teaching lessons, or arranging field trips with other homeschoolers. A few interviewees shared their thoughts and experiences.

Anne explained:

I have a love/hate relationship with Facebook some days in that I can tend to want to waste time and scroll my home feed (hate doing this) and yet I keep my account as it is a goldmine of smart, more experienced homeschoolers than myself that I can lean on (and in turn help!). So I connect with others regularly if I have a question or need some insight about something that I may feel I could improve upon in our schooling.

Catherine commented:

I use Facebook regularly to find volunteer and social activities we can attend and to get information about curriculum. I think these types of networks have made homeschooling much easier and it eliminates a lot of the isolation that can come with homeschooling. Sometimes it makes me feel like I am not doing enough, but much more often I find it helpful in pointing me in the right direction.

Erin said:

Technology allows me to see what other people are doing for their lessons, what resources they use, what websites etc. This is really good as I get recommendations. This is via Facebook groups. I can also connect with other home schoolers to a degree, as my local group in the UK is posted online.

Jessica recounted:

I can easily preview and read reviews of different curriculum to see if it might be a good fit for us before purchasing, or assemble my own curriculum using the vast amount of educational videos, websites and apps for free. The world and our knowledge of it are constantly changing and it's nice to be able to have immediate access to the most current research.

Technology enables home educators to make informed decisions regarding curriculum and teaching materials for their students. The ease of access and the direction and support offered by other teachers raises parents' confidence and assurance that students are receiving necessary and appropriate work. This freedom is in contrast to the power and freedom teachers have in schools today. Dewey (1903) in his work *Democracy in Education* comments on the problem of American schools and teachers. His words highlight a missing factor in the attempt to educate children in schools then and now:

...until the public-school system is organized in such a way that every teacher has some regular and representative way in which he or she can register judgment upon matters of educational importance, with the assurance that his judgment will somehow affect the school system, the assertion that the present system is not,

from the internal standpoint, democratic seems to be justified. (Dewey, 1903, p. 195)

### **Providing an Engaging, Individualized Educational Experience**

Comparing results from the questionnaire with results from interviews, the stories shared by the interviewees paint a vivid picture of how technology can enhance the total learning experience for a child. Of the thirteen interviewees, Rose has the longest experience as a home educator, and has been using technology for her homeschooling experience over the span of three decades. Her experience substantiates responses from the survey data that homeschool parents want to teach their children in a way that they learn best:

ROSE

Back in the 1980s, Rose began homeschooling her two sons. One son was gifted and reading books by age 3. Her younger son began reading closer to age 5. Although her sons were bright, she worried that the public school would place them into a lower track. “They were African American boys,” she said, “and they tend to get tracked.” At the time, Rose’s flexible work schedule allowed her to continue homeschooling the boys. She later had a daughter. Rose remembers, “She didn’t start reading until 8, so I *definitely* didn’t want her in the school system.” Her first son graduated as a homeschooler. Her second son went to public school in 9<sup>th</sup> grade, and then came back home. Her daughter was homeschooled until 6th grade and graduated from public school. Rose never imagined she would be homeschooling again. But now, in her second marriage raising two more children, Rose still believes homeschooling is best for her children. She recounted how technology changed the entire homeschool scene for her:

...I used [technology in the past] for Math for like reinforcing and adding and subtracting and all that stuff. So I *felt* like I was using technology. ... So, now I’m

married to my wife, and she's in the military. So we travel, and I don't want to carry tons of books. [She quickly rattled off a long list of the amount of the technology that they use.] So we have Kindle, we have an iPad, I even have a Samsung tablet. And then the programs we have! Epic Books allows us to read books online *and* on TV. We have the overall preschool program Starfall, we have all those little apps from Apple that you learn different things on. We have Spanish. We have, I mean... [She giggles realizing that she could go on and on.] So now, it's just, it's... [She shakes her head] it just is. It's just a part... like these kids, [She says with a sense of awe and wonder in her voice] they'll grow up and it'll be like turning on the television. It's no big deal for them.

With all that technology at their fingertips, I asked her if she and her children are learning all throughout the day, or if she has a more organized school day where there is an actual set time for "school." She says that she does a school-like type of day for her daughter because her daughter wants to be like the TV show character named Daniel Tiger, who goes to school every day. But in reality, Rose explains, "it [homeschooling] is just part of living at this stage," as her children are very young.

The interview was at a close, and I asked Rose if there was anything else she would like to share about technology and homeschooling. She shared an interesting point about how she and her wife perceive technology use quite differently:

I was talking to my wife who's significantly younger than me. She's like 32 and I'm 56. I said to her, "Do you think that you have to teach how to use computers, and stuff, now. And her answer was "Yes, definitely." I still don't feel like, even though I use it extensively, I don't feel like it's necessary. I feel like if you still teach those basics—the reading, the writing, the math, that you can pick up anything. You can learn how to do

anything if you know how to read well. So I don't think it's necessary, not even teaching people how to program and stuff like that. I think that you have to teach them how not to be *afraid* of technology, if that's what you choose, to use it. But it's so easy now, and if you just follow the directions...you're caught up already.

I asked if she thinks technology will ever change the public school system:

I don't. ... because I feel like... school is an institution. It just moves..so..slowly. It doesn't keep up with technology. It doesn't keep up with world events for that matter. And it's not a cut on the schools! ... I just feel like you have to go through 15 people to get a program approved, and if *that* doesn't bother you...[She rolled her eyes, and shook her head.]

### **Challenges and Frustrations With Technology**

When asked about the challenges of using technology in a homeschool environment, sixty-four percent of those who responded ( $N = 286$ ) expressed concerns about their children's social, physical, and emotional health while using technology. Over thirty percent said that they monitor use, worrying about Cyber-safety issues and inappropriate content for children. Sixteen percent said that technology issues such as Wi-Fi connection, updates, and websites crashing were frustrating and sometimes interfered with lessons for the day.

Andrew works in the computer software business, and as a home school parent he shares many of these concerns. His story depicts a few of the reasons for the worry:

#### **ANDREW**

Andrew and his wife have been homeschooling their two children for close to thirteen years. His daughter started the transition to online schooling in 7<sup>th</sup> and 8<sup>th</sup> grade, and now, as a junior in high school, takes all but one of her classes online. Her first few experiences with



online learning consisted of a once-a-week webinar with a teacher who presented curriculum and instruction for her to follow over the Internet. Andrew's daughter excelled and truly enjoyed online instruction. For those classes that did not have an online component, his daughter would use DVDs for lessons and complete homework assignments, much like the "flipped classroom" method which encourages student mastery of material outside of the brick and mortar classroom.

Andrew believes the differences in online courses do vary from class to class and teacher to teacher, but the challenges of software application issues, computer updates, and trouble with getting videos to work adequately leads many teachers to use mostly audio while students communicate using the chat box. Expanding on the idea of using computer technology for instruction, Andrew explained his perceptions, "Certainly in the broader sense just about everything we're doing in homeschooling is because of technology. That would not have been possible; you know, forty or fifty years ago, at all."

Andrew has high expectations for what learning can and should be when using technology. He explains his frustration with the inefficiency of online learning, especially with web conferencing, when technology does not cooperate:

[The attitude seems like] we're just going to fall back to the least common denominator of watching the teacher talk and then a teacher asks the question and then they wait for 15 kids to type their answers in the chat box, Which just seems to me like... \*face-palm\* [Emphasizing his sense his frustration]. At least with the kind of technology crowd I've run into it's largely not video—it's audio—and it's typing in the text box.

Andrew believes that effective online learning also comes down to teacher quality and a knowledgeable use of technology. He has been fortunate to find instructors for his children who know how to manipulate technology and provide high quality instruction, so that his daughter

and his son truly excel. One of his daughter's math instructors would video-record herself working math problems to answer his daughter's personal questions, providing a more, one-on-one, individualized learning experience. Andrew described one experience his son had while taking music lessons using the Internet:

[My son] had a music instructor in another [U.S.] state, and he was teaching my son the Hammered Dulcimer. We were using two web cameras at two different angles on the instrument. That was a case where instead of having high expectations and being a little disappointed, I didn't have very high expectations [because] I didn't know how well an online music class worked. But with the angles of the camera, the way they were, it really worked very, very well. And that was the case where you probably wouldn't think it *would* work very well. And we were using extra microphones and things like that too, so the teacher could hear and see everything very well. [He describes this entire experience with enthusiasm and satisfaction in his voice.]

In their homeschool, Andrew's wife is the primary home educator, but Andrew takes part in researching curriculum, finding online programs, and assessing outside instructors. He also sees himself as the "troubleshooter" for fixing connections to webinar programs, such as when they suddenly stop working after a newly installed software update. Andrew actually seems to help quite a bit to ensure that the process of using sophisticated technology goes smoothly. According to his survey, Andrew sees technology as a tool that provides further instruction in areas that he, or his wife, are not skilled to teach. Andrew explained, "We're getting to the level where we need to have teachers who have experience with this and you get connected with them. So technology in that sense is simply the avenue by which that happens, connecting with real [teachers]."

In the last few minutes of the interview, our conversation drifted toward the dangers of using too much technology, too often, and without questioning the consequences. Andrew has read a lot about media ecology. He has been especially moved by Neil Postman's book *Technopoly: The Surrender of Culture to Technology*. Andrew explained:

I'm surprised how many of my peers [other home educators] don't seem to take it seriously, the dangerous side of it. It's discouraging. It's not just the possible things that it could be doing to our brain, it's the things [technology is] preventing us from doing that might be otherwise developed, that just don't get developed, because [technology] is taking all of our time.

Andrew mentioned an article he saw recently about teens now having difficulty interacting with strangers. As a youth, Andrew learned his social skills and how to interact with people from watching his parents' behavior. However, today, Andrew sees teenagers constantly on their phones, playing games, and interacting less within society. Andrew believes that this new reality could be a challenge for some homeschoolers who lack frequent interaction with others in certain circumstances.

Interviewees Angela, Sylvia, and Andrew, who view technology as an assistant or a tool in their homeschool, explained that technology does not make "decisions" about curriculum or instruction. These home educators seem resolved to control technology use in their home rather than allow their children to explore the digital world all on their own.

### **Home Educators' Further Thoughts**

In response to survey Question 26, *Is there anything else you would like to share about your experience using technology for homeschooling?*, many home educators added further comments regarding their beliefs and experiences with technology. Data gathered from over one-

third of survey responses revealed that sixty percent of these parents believe the use of technology is instrumental to teaching and learning. Several home educators said that they could not imagine homeschooling without technology. Many respondents believe that teaching with technology provides higher quality education and is essential to promote technology literacy. Twenty-six percent thought that using technology led to higher quality teaching, and many considered themselves better teachers because of technology.

Thirty percent of participants described technology as a valuable tool for homeschooling. These particular home educators explained their vigilance to control addiction to devices, to ensure cyber-safety, and to maintain a balance between screen time and physical exercise. Several parents use technology to meet other homeschool parents, via social media, in order to gain and offer personal and professional support. Other parents expressed overwhelming gratitude for assistive technology for their children with special educational needs. Comparing results from the survey with results from interviews, the stories from the interviewees paint a more complete picture of how technology enhances the total learning experience for the child. For example, interviewee Andrew capitalizing on available technologies which allow his son to take dulcimer lessons with a teacher in another U.S. state.

Conversely, twelve percent of those surveyed said that they did not see technology as vital or necessary at times for homeschooling. Several said that they used it sparingly, or in some cases preferred pen, pencil and paper to a mouse, keyboard, and screen. Interviewee Angela explains her experience with her young children using technology. She sees times when it is useful and times when it is not necessary for homeschooling:

## ANGELA

When asked about her reason for homeschooling, Angela explained that primarily both she and her husband do not agree with the purpose of the school system: "...to turn out young adults who will do what they're told; who won't question authority; who lack creativity."

Having read books by public school critic, John Taylor Gatto, Angela was inspired to allow her son "to be his own person, to follow what he's interested in, to not be afraid to speak up when something seems odd or he thinks of it a different way." Angela described one of her schooling experiences where the teacher heavily criticized her creative, outside-the-box thinking; even penalizing her for not answering how "most" would agree. "As I've had more kids I just want them to have individual attention, to go at their own pace, and to have a very firm family attachment to support them as they grow up."

When sharing how she views herself as a teacher when using technology, Angela answered that it is difficult to sit squarely in one camp:

Honestly, questions like that are hard for me. I get my hackles up at anything acting like it takes the place of me as the teacher [she laughs], so that's likely why I chose what I did. I actually somewhat agree with the idea 'My children use technology to teach themselves and I am the cheerleader.' I envision my oldest getting more and more independent in his schoolwork as he gets older, with me just checking in on him and supporting what he's doing. But with younger kids, it's definitely just a tool that helps me out which is somewhat like an assistant.

## ANNE

Anne describes her philosophy of teaching as a balance between formal learning and fun learning. Her homeschooling style is a mix of the Charlotte Mason method and the Unschooling

method. While Charlotte Mason mostly focuses on classic literature, Anne also allows her son to read silly fiction books to give him some choice over what he reads. An example of *unschooling* is when her son seeks to be an “Inventor” (as he likes to call himself.) Anne explained:

He has loved to use tools since he was 2 (supervised!!) and it has grown into a deep passion for creating gadgets and electronics and such. I give him a good chunk of the day to work on his ideas in his "workshop" in our basement and if he wants to watch a video on how to build a vacuum (current project) or a fan (past project), we will use KidsYoutube to do that and then he'll go on his merry way. ;) Usually we get our CM [Charlotte Mason] work done first, as I like to keep a bit of a schedule, but most days he gets a bunch of time for learning more about this passion and actually building.

When asked about her reasons for homeschooling, Anne shared a bit about the social agenda she has noticed in Canadian public schools in her province:

We are all for teaching our kids (DAILY, as it usually comes up in something they've done lol) to love our neighbour and teaching our children to respect everyone as we believe we are all made in God's image, but there is a definite shift these last few years in a push of indoctrination of leftist ideologies and a redefinition of love=acceptance/agreement/applauding.

Anne explained how grateful she is to be homeschooling with technology, and how she seems to have the best of both worlds:

It makes it a whole lot easier and non-isolating from what we've experienced so far. ... It is also a blessing too to be able to view our province's public school curriculum checklists online of what a student will be taught in each grade (not that I get worried if we are not checking off everything on the list of what a public schooled grade 1 student learns, as

the point of how we homeschool is that it isn't taking the public school and bringing it into our home but doing school in a way that works for our family and values and goals, BUT it is nice to be able to see it for interest's sake and it may cause me to add in something to our learning that isn't in our curriculum if I think it is important for him to know!)

## JESSICA

Jessica and her husband homeschool two sons, ages fifteen and ten. She took her boys out of public school half way through 6<sup>th</sup> grade and 1<sup>st</sup> grade. Several factors influenced their decision to homeschool. However, the desires for familial closeness, to provide a nontraditional child-interest-led education, and to have freedom to travel were the primary reasons for choosing home education.

Jessica noticed the nature of public schools was too much busy work with scarce opportunities for independent learning. As a preschool teacher, Jessica realized that, the preschool goals of getting children “kindergarten ready” seemed to clash with Jessica’s philosophy of child growth and development. “I grew to believe that preschools needed more social-emotional skills and imaginative play. It led me to research different educational models and decide that homeschool was an option we’d prefer.”

Child interest-led learning drives Jessica’s instruction. She plays the role of facilitator for her fifteen year-old. He is a driven student who pursues his own interests and needs only recognition and a few suggestions as he learns. Her younger son needs a little more guidance and direction. The state where Jessica lives allows homeschoolers to attend public school part-time. Jessica’s son is a cellist in the school orchestra. He has also taken art, leadership, and landscape design classes, as well as participated in school clubs and cross-country running.

Jessica says that she is definitely not a “Radical Unschooler” like those who allow children to have complete and unlimited freedom of choice in playtime, school time, and personal time. While she wants her ten year-old to have some choice in how he learns, she spends more one-on-one time with him to work on academics. But as long as he is progressing, she allows him plenty of free time to be creative and lose himself in a project for hours or even days.

Jessica’s older son uses the Internet as a member of photography websites. He connects with photographers, posts his own photos, and comments on other peoples' photos. Unexpected opportunities sometimes come along with this type of networking, allowing friendships to grow. Jessica said that her family has a good balance of screen time and outdoor activities. As a family, she and her husband model using technology to explore things in depth. As far as the initial influence and continual assistance technology has provided, Jessica explained:

Technology is extremely helpful in the homeschool process. In researching the initial decision to homeschool, the Internet was an invaluable tool - finding out the laws, curriculum types, homeschool styles, reading the blogs of both parents and homeschoolers was all very helpful.

When asked if technology played any part in her decision to homeschool, she replied:

The availability of technological resources absolutely influenced my decision to homeschool! The wealth of knowledge the Internet provides makes it far more convenient (and much less scary and overwhelming) for me to help my kids get a great education.

Jessica explained that technology is a “co-teacher” in her homeschool, in that if her own knowledge is exhausted or she cannot teach a topic clearly enough, someone else on the World



Wide Web can probably teach it better. Some of those “co-teachers” are from Khan Academy, Teaching Textbooks, Outschool.com, YouTube, and Netflix. She elaborated:

I can provide ideas or my kids can come up with them themselves and use technology to dive deeper, learn more and follow rabbit trails of links to learn even more and end up with an entirely new idea or interest. I like that I can point them in a direction and the kids can take the wheel and direct themselves with technology.

When asked about public schools and whether the child interest-led learning that homeschooling provides would be possible to emulate on a scalable level, Jessica postulated:

To implement this model on the public school level would take a lot of re-imagining of what education is from teachers, administrators and parents alike. The current focus on test scores and having a "common core" of knowledge that must be taught to and mastered by all is quite the opposite of what works best for us and I suspect many others as well, but making meaningful change on a public school scale would take quite some time.

Finally, a couple Survey Respondents shared these other concerns when home educating with technology:

SR 120: Ideas on how to introduce and include technology in a school setting without including excessive amounts of screen time are not readily available. I would love to see more information available on how to use technology in a homeschool setting at younger ages.

SR 89: I was so adamant, five years ago when we started homeschooling, about being technology free that I made my children's world smaller. I'm thankful to explore and expand their appreciation of new things not locally available to us now through online resources. We

live in a technological advanced world & need to know how to use technology in a healthy, appropriate way.

## **Summary**

The purpose of this chapter was to investigate in depth how home educators view technology use for homeschooling, and how they perceive themselves as teachers while using technology. First, the analysis of survey data and then the constant comparison with the interview data noted both similarities and differences on the specific questions. Overall, the analysis revealed several similarities. Data also revealed that some parents are removing their adolescents from conventional school and schooling them at home. While there is some change in how home educators perceive their teaching with technology while teaching older children, when looking at the differences in the education level of the parents and the use of technology the results are not statistically significant within this sample.

## **Limitations**

The results of this research cannot be generalized beyond the scope of the study. The survey sample is small and not representative of the larger homeschooling population. Nearly half of the respondents are new to home education. Those just beginning their homeschooling journey are more likely to reach out for help, often through social media where the majority of the data for this study were collected. Although the survey was distributed through E-mail in addition to social media, a higher number of responses may have come from parents completing the survey link on Facebook. This may influence the number of responses in favor of using technology for homeschooling.

This study also includes a homogeneous sample, as most of the participants are Caucasian, middle class, well-educated mothers. It is unknown whether mothers are most often

responsible for homeschooling the children or how fathers may be involved either in supportive roles or as co-teachers. The study might have benefited from the perspective of full or part-time stay-at-home fathers. Although the father of a homeschooling family is often presented in the literature as the primary financial provider in the home (Apple, 2013), more women are now entering the workforce which may influence homeschooling family dynamics.

Finally, I am a veteran homeschool parent, and as the instrument in qualitative research I bring my own thoughts, feelings and perceptions to this study. As the primary data collector, in my effort to establish a conversational tone, may have highlighted personal views and perceptions of technology use in home education that could have influenced the approach of the participants. If I led an interviewee into conversation in any single-minded way, this might have resulted in a partial representation of how that home educator used technology, painting a partial picture of their actual experience. In order to avoid this possibility, I took great effort to stay within the boundary of the semi-structured questions for the interview. I also respected silent pauses in the conversation, allowing interviewees to go into more detail rather than filling the pauses with continuous chatter. This allowed the interviewee to continue to express thoughts and feelings in more depth.

## **Chapter 5 Discussion**

### **Summary**

The purpose of this study was to investigate and describe how home educators use technology for homeschooling. In addition, I sought to discover how home educators perceive themselves as teachers when using technology. Albert Andrade's (2008) dissertation research exploring the relationship between computer use and the increased growth of homeschooling was

used as the starting point for my research questions: How do home educators use technology for homeschooling? And how do home educators see themselves as teachers when using technology?

The data gathered and analyzed included both quantitative and qualitative responses from questionnaires ( $N = 316$ ) and thirteen in-depth interviews with participants who volunteered for the study. From survey results, I noted a number of similarities in responses and those similarities were illuminated by the qualitative data from the interviews. In my analysis of home educators' perceptions from survey results, as well as the interviews, I noted several themes: 1) homeschooling reasons and methods; 2) independent learning and technology as a tool; 3) technology and wellbeing; 4) technology as an assistant; 5) challenges and frustrations with technology; 6) social networking, support, and resources; and 7) providing an engaging, individualized educational experience for each homeschooled child.

Using the constant comparative methodology of the themes found from surveys and interviews I discovered several patterns, and four overarching themes emerged revealing that technology provides parents with: 1) ease of access to information, often via the Internet (Berge & Collins, 1995); 2) quality curriculum and individualized instruction, most often via YouTube and other educational websites such as Khan Academy (Carpenter & Gann, 2015); 3) child interest-led learning in an engaging environment, through student choice of subject with interactive and "fun" games (Berge & Collins, 1995; Gee, 2013); and, 4) personal and practical support for home educators, through social networks such as Facebook (Hanna, 2012; Jacobson, 2001). Additionally, some home educators believed their role changed as they depended more on technology as their child matured. Many home educators use technology in any number of ways from completing routine tasks, such as record keeping, to allowing technology to be the teacher

while they assume the role of co-teacher, facilitator, or cheerleader. Furthermore, several home educators see themselves as teachers and technology as only a tool for teaching and learning.

Similar to the demographics revealed by other research studies (Ray, 2016) the sample of home educators in this study was mainly Caucasian, middle-class, well-educated mothers. Additionally, the primary reasons for homeschooling was dissatisfaction with academic instruction at traditional schools, concerns about the environment at other schools, religious reasons, and a desire for family bonding (Anthony & Burroughs, 2010; Isenberg, 2007). The sample of home educators in this study differs from the general homeschooling population due to its high number of new homeschooling parents and many who are using unschooling methods of instruction. Although studies have suggested that unschooling is a growing form of homeschooling (Ricci, Laricchia & Desmaria, 2011) this is inconclusive given the small sample of home educators in this study.

Home educators who reported using unschooling as a method of instruction described how they allow their children to wander freely on the internet exploring what interests them and learning at their own pace (Bullock, 2011). This freedom, aided by technology, as described by Abigail allows her son to excel in writing. Furthermore, home educators like Julia, Maggie and Erin believe they do not have to be proficient in all subjects to provide an appropriate education for their child (Van Galen, 1988).

In my analysis of reasons for homeschooling, I found that technology influenced the decision-making process for home educators; however, more home educators described technology as a welcome addition to their homeschooling environment rather than a reason for choosing to homeschool. For those whose choice to homeschool was influenced by available technologies, in line with Andrade's (2008) findings, home educators attributed their decision to

the supportive networking through social media and the ease and richness of educational resources found on the Internet.

Echoing Isenberg's (2007) research, the mothers in this study are highly educated and a majority use technology as an assistant for homeschooling. However, from the size of this sample it is not entirely clear if better educated mothers use a smaller amount of technology while teaching than less educated mothers who may use technology more as a co-teacher or a teacher. Many parents who use technology as a tool mentioned their preference for online learning programs such as Khan Academy, or for locating tutors or teachers such as the out-of-state music teacher Andrew found for his son's music lessons.

Homeschooling offers many advantages, such as small class size, personalized attention for each student, and a comfortable learning environment free from competition or bullying. These capabilities enrich educational experiences and are preferred by home educators in contrast to having their children sit for long periods in small desks, in rooms with same-aged peers while listening to lectures for the majority of a school day. As described by Julia, Catherine, and Erin, many home educators appreciate the ability their children have to learn at their own individual pace without pressure or needing to compete with other children.

The home educators in this study are adept at using technology and described their children in the high ability range of using technology for education. Supporting Boyd's (2014) claims that teens are more often using technology to conduct positive social interaction with others, parents in this study described a sense of trust in themselves and their children to explore what they wish to know, connecting with others locally and globally and to be active participants in their own learning.

Findings from the questionnaire and interviews show that home educators believe that available technology assists them in arranging social gatherings for parents and children of all ages, ameliorating the isolation homeschooling can cause (Apple, 2010; Isenberg, 2007). Parents also use technology to reach their educational goals. Several respondents and interviewees explained their perception that technology-based learning improved the quality of education through implementing tailored curriculum and instruction (Alias & Rahman, 2013).

### **Interpretations**

This research reveals the attitudes and beliefs of parents who see home education as the better choice for their children due to distrust and disappointment with traditional public schools. As nearly one quarter of the home educators in this study have made the decision to school their adolescents at home, home education could lead public schools to reassess their entire structure of the traditional model of education. Based on the shared experiences and viewpoints of these home educators, academics, administrators, and policy makers might consider new school reforms. A partnership between public schools and home schools might be beneficial for recognizing student voice and parent choice as a part of the education conversation. This study reveals the ways technology, rather than replacing the teacher, could shift responsibility of the educator to that of co-teacher, facilitator, or cheerleader. Classroom teachers may reflect on how technology which enables autonomous learning repurposes their role as a teacher as students mature.

Technology literacy is a concern for many families, and home educators believe their children need to have good technology skills in the future. A sizable majority of parents within this sample expressed a desire to regulate use of technology and a preference for allowing increased access to technology as their children mature. This principle is collective, as digital

literacy is a primary goal for educators who intentionally model good digital citizenship and moral and ethical behavior online. This is accomplished not from a feeling of fear of technology, but by knowledge and understanding of the student and society.

A few home educators reported feeling overwhelmed by the number of curriculum resources available today, a feeling they would not have had twenty years ago. Parents also mentioned the high quality of programs and software available, yet also frustration with technology glitches. However, analysis revealed that using technology for homeschooling led to a perceived higher quality education than parents could provide on their own. Parents perceived that online materials, in the form of curriculum and lessons by qualified tutors and expert instructors, allowed them to provide higher quality teaching.

Home educators have the advantage of knowing their child better than any other instructor might. Homeschooling parents in this study displayed awareness of and sensitivity to their children's academic, social, psychological, and emotional needs. Homeschoolers have more time to engage in one-on-one instruction in an environment that supports a child that wishes to set the pace of her learning. Technology provides homeschoolers easy access to support networks for those interested, and facilitates searching for curriculum material. Although most homeschooling parents are not trained educators, parents in this study no longer feel the need to be the "expert" in a particular subject area but rely on technology to bring the most knowledgeable teachers to their children. Whether virtual tutors are adequate substitutes for expert teachers in the classroom is unknown.

Why study homeschoolers and their use of new technologies? In this sample ( $N = 316$ ), nearly half have been homeschooling for three years or less, and nearly one-quarter of these new home educators are schooling adolescents. Some home educators are removing their children



from public schools and, with the assistance of technology, may be enabling their children to educate themselves. Connecting with teachers and tutors online and with access to available tutorials uploaded onto YouTube, I speculate that some homeschooled children are teaching themselves with little parental supervision. Several parents in this study shared that they see themselves as cheerleaders while their children use technology to teach themselves.

Many home educators believe that political agendas, a focus on economic efficiency, and neglecting to care for the emotional and psychological needs of the child are legitimate reasons to seek a more positive educational experience outside of public schools. John Dewey once noted that schools then—even more so now—were missing the necessary component in preparing its future members of society:

Indeed, almost the only measure for success is a competitive one, in the bad sense of that term—a comparison of results in the recitation or in the examination to see which child has succeeded in getting ahead of others in storing up, in accumulating, the maximum of information. (Dewey, 1903; 1990, p. 15).

Sadly, not only has public education continued in such a tradition but with high-stakes testing it has become considerably worse. Brooks and Brooks (1999) say that schools focused more on high-stakes accountability systems “typically move attention away from principles of learning, student-centered curriculum, and constructivist teaching practices. They focus instead on obtaining higher test scores, despite research showing that higher test scores are not necessarily indicative of increased student learning” (p. 23). Moreover, the option of home education may well divide families who have the economic means to make a choice whether to

home educate leaving many who do not have the means to homeschool in poorer schools where they are likely to receive an inferior education.

Finally, a majority of parents in this study are aware of the potential risks associated with technology use such as addiction, obesity, and antisocial behavior from overuse. Many home educators intentionally regulate and watch over their children's computer activity, often working alongside their children while schooling. Cuban (1986) cautions enthusiastic proponents wishing to put computers in every classroom. He highlights what teaching and learning with machines would be like for teachers and students, demanding a different role for the teacher. Even if teachers' roles evolved into co-teacher or facilitator while students complete work on computers, in order for whole child development, social, cognitive, and moral, a teacher must always be in the classroom. The argument by many is strong caution and is well heard, but the key seems to be balance. Teaching with the assistance of new technology has been around for more than a hundred years, and children are still learning, maturing, and producing. If anything, technology has required greater human interaction as teachers are forced to learn how to manipulate technology while continuing appropriate pedagogy.

Monitoring technology use is important to most home educators in this study. However, it is unclear how much computer time is regulated during school hours to lessen the distractions that hinder completing schoolwork, and how much parents intentionally regulate computer use outside of school hours. Several home educators see technology as only a tool that a teacher uses to find low cost or free curriculum supplies, and for accessing videos on YouTube and other streaming sites. It is thought this allows children to learn more easily according to their modalities (Gardner, 2008).

The parents in this study think about the dangers of the overuse of technology and regulate use until their children mature. A wise instructor controls the technology rather than forcing a child to learn lessons from a machine. In fact, many responses expressing familial closeness as a reason for homeschooling, described browsing the Internet as a family affair. It is possible that homeschooled children and their families spend more time together using technology to exchange new knowledge and play games together. Watching shows on Netflix and YouTube is popular among homeschoolers; however, as reported, small children seemingly consume information alongside their parents rather than isolated in their room.

### **Suggestions for Future Research**

For the purposes of this research, it was important to consider how new technologies, such as social media and the exponential growth of the Internet, might influence the growth of a widening population of homeschoolers across the globe. Perhaps these research results will have an impact on educational goals and practices within traditional school systems. If more parents express a desire for a non-traditional education, schools might look at their traditional model of education and consider new ways of using technology to bring new and progressive ways of teaching. Student agency in schoolwork and autonomous learning together with a trusted teacher may be the formula for deeper and more meaningful education. James Paul Gee (2013) supports technology and its ability to bring self-worth and agency to millions. He says playing games and solving problems with others around the world is the foundation of a democratic civil society. Gee suggests that looking beyond popular gaming with technology, using digital tools or technology should be a test “for what a true education should be in the twenty-first century and what we should expect from digital media and technology” (p. 214).

Results of the study indicate that technological approaches to teaching and learning appeal to parents who are dissatisfied with the academic performance of conventional schools, and parents who are comfortable using technology perceive that they can provide a better education for their children at home. While some school teachers may feel slighted by parents who think they can school their children better than a certified teacher, home educators raise similar questions and have legitimate concerns whether teachers who are following rolling mandates and constant changes to curriculum are putting the needs of children first. Most home educators may not be certified teachers, but evidence, from student test scores to civic participation (Collins & Halverson, 2010; HSLDA 2017; Ray, 2016), suggests that many homeschooling parents are intentional in locating the necessary curriculum and instruction to provide an adequate education for their children.

Further research may explore whether an environment that encourages family bonding (Lois, 2013) is a primary reason parents choose to homeschool or rather a natural outcome of homeschooling. Findings suggest that some home educators also consider the health of the whole child in education. Parents evaluate the technology, regulate its use, and often make learning with technology a whole family activity.

Concerns arise, as middle- and upper-class families keep their children out of conventional schools, that an increase in the opportunity gap may ensue. If it is true that homeschooled children are receiving a better education through quality curriculum, engaging teaching, in an appropriate environment, considering how public schools might provide such services is prudent. What can public schools offer to stop families from leaving the school system? If the primary reasons are dissatisfaction with academics, unfavorable environment, and

a desire to provide a nontraditional education, perhaps a micro-evolution of a centuries old education system is worth exploring in more depth.

This study was about parents' views and experiences teaching with technology in a homeschool environment. Future studies might look at the values and perceptions of homeschooled children and adolescents to better understand their experiences with education and technology. Further research exploring individual perceptions of teaching with technology in public schools would allow educators, in home and traditional schools, to gain a more comprehensive view of technology use for educational purposes.

Due to a lack of research on the topic of gender and homeschooling it is unknown whether mothers or fathers devote more time to the schooling of their children. In this study, the homeschooling father, Andrew, said his role in homeschooling is to research curriculum, find online programs, and assess outside instructors for his children in addition to fixing any technical problems with computers. As family demographics are changing, homeschooling could also be changing where more mothers are working full-time, as is the case of the interviewee named Catherine, who is a full-time lawyer and home educator. This could mean that some mothers are attempting to become "supermoms" assuming roles of both breadwinner and teacher. It may also be that more fathers are sharing the responsibility for home educating their children. This information is beyond the scope of this study.

## **Conclusion**

Developing an understanding of the processes by which home educators use technology, and their perceptions of how it influences education is a valuable contribution to the literature. This new information narrows the gap between research and practice, and provides teachers,

administrators, scholars, and policy makers an instructive view of the potentials of teaching with technology.

What is the purpose of education? Economics and employment, yes; but also, increasing the intellectual, social, ethical and civic responsibility of the child. Education is a dynamic process which causes changes within an individual. Technology can influence changes whether psychological, physical, emotional or spiritual. Challenges both for teachers and home educators is that people generally resist change especially if they do not understand the direction of the change.

What lessons can we draw from home educators who use technology? Home educators in this sample, particularly unschoolers, perceive technology as a valuable asset to providing a rich and rewarding education for each child. The majority of parents in this study are concerned about a balance between technology use and nontechnology and noncognitive based learning (e.g., physical, social, and emotional). Those parents who teach with a child interest-led learning philosophy strive to allow their children autonomy and freedom to pursue their own needs and interests. An important question to pose when looking at 21<sup>st</sup> century schooling, is how traditional schools use technology effectively while supporting the personal and educational needs of the individual?

The results of this study benefit all children whether in public, private or homeschool settings. While it might not be ascertainable whether a substantial number of children are receiving a better education at home than they would experience in a conventional school, we cannot ignore the testimonies of the interviewees in this study who have left full-time work to school their children at home with the assistance of new technology. I hope parents, educators, and all education stakeholders take further interest in how technology can improve pedagogy,

foster teacher support, and construct an environment that prepares all children for not only their immediate goals and aspirations, but for the future of our society. Undoubtedly, time and continued research will shed light on what part homeschooling with technology plays in changing and assessing the quality of instruction and curriculum in school systems around the world.

## References

- Alias, N., & Rahman, M. (2013). A Model of Homeschooling Based on Technology in Malaysia. *Malaysian Online Journal of Educational Technology*, 1(3), 10-16.
- Åkerlind, G. S., & Trevitt, A. C. (1999). Enhancing self-directed learning through educational technology: When students resist the change. *Innovations in Education and Training International*, 36(2), 96-105.
- Andrade, A. G. (2008). *An Exploratory Study of the Role of Technology in the Rise of Homeschooling*. Doctoral dissertation, Ohio University.
- Anthony, K. V. & Burroughs, S. (2012). Day to day operations of home school families: Selecting from a menu of educational choices to meet students' individual instructional needs. *International Education Studies*, 5(1), 3.
- Anthony, K. V. & Burroughs, S. (2010). Making the transition from traditional to homeschooling: Home school family motivations. *Current Issues in Education*, 13(4), 3-31.
- Apple, M. W. (2013). Gender, religion, and the work of homeschooling. *Gender, religion and education in a chaotic postmodern world* (pp. 21-39). Springer, Dordrecht.
- Apple, M. W. (2010). The Emerging Politics of Curriculum Reform: Technology, Knowledge, and Power in Homeschooling. In *Second International Handbook of Educational Change* (pp. 913-931). Springer Netherlands.
- Apple, M. W. (2000). Away with all teachers: The cultural politics of home schooling. *International Studies in Sociology of Education*, 10(1), 61-80.



- Arbaugh, J. B., & Duray, R. (2002). Technological and structural characteristics, student learning and satisfaction with web-based courses: An exploratory study of two on-line MBA programs. *Management learning*, 33(3), 331-347.
- Attaran, M., Maleki, S. & Alias, N. (2013) "We Are the Etcetera": Homeschooling in the Iranian society. *Life Science Journal* 10(2) 1405-1413. Retrieved from <http://www.lifesciencesite.com>.
- Attewell, P. (2001). Comment: The first and second digital divides. *Sociology of education*, 74(3), 252-259.
- Bachman, J., & Dierking, L. (2011). Co-creating Playful Environments That Support Children's Science and Mathematics Learning as Cultural Activity: Insights from Home-Education Families. *Children Youth and Environments*, 21(2), 294-311.
- Barbour, M. K., & Reeves, T. C. (2009). The reality of virtual schools: A review of the literature. *Computers & Education*, 52(2), 402-416.
- Basham, P., Merrifield, J. & Hepburn, C. (2007). Homeschooling: From the extreme to the mainstream, (2<sup>nd</sup> Ed.), *Studies in Educational Policy*. Retrieved from <http://www.fraserinstitute.org>
- Bauman, K. J. (2002). Home schooling in the United States: Trends and characteristics [Electronic version]. Educational Policy Analysis Archives, 10(26). Retrieved 10/27/2009 from <http://epaa.asu.edu/epaa/v10n26.html>
- Bennett, W. J. (Ed.). (1995). *Moral compass: stories for a life's journey*. Simon and Schuster.
- Berge, Z. L., & Collins, M. P. (Eds.). (1995). *Computer mediated communication and the online classroom: distance learning*. Cresskill: Hampton press.

- Boschee, B. F., & Boschee, F. (2011). A profile of homeschooling in South Dakota. *Journal of School Choice*, 5(3), 281-299.
- Bowden, C., & Galindo-Gonzalez, S. (2015). Interviewing when you're not face-to-face: The use of email interviews in a phenomenological study. *International Journal of Doctoral Studies*, 10(12), 79-92.
- Boyd, D. (2014). *It's complicated: The social lives of networked teens*. Yale University Press.
- Brooks, M. G. & Grennon Brooks, J. (1999). The courage to be constructivist, The Constructivist Classroom. *Educational Leadership*, 57(3), 18-24. Retrieved at <http://www.ascd.org/publications/educational-leadership/nov99/vol57/num03/The-Courage-to-Be-Constructivist.aspx>
- Bullock, K. K. (2011). *Home schooling and technology: what is the connection? A collective case study in Southeast Ohio*. Doctoral dissertation, Ohio University.
- Cambre, M. & Hawkes, M. (2001). Twelve Steps to a Telecommunity. *Learning & Leading with Technology*, 28(6), 22-27.
- Carpenter, D. & Gann, C. (2015). Educational activities and the role of the parent in homeschooling families with high school students. *Educational Review*, 68(3), 322-339.
- Carr, N. (2011). *The shallows: What the Internet is doing to our brains*. WW Norton & Company.
- Charmaz, K. (2008). Grounded theory as an emergent method. *Handbook of emergent methods*, 155, 172.
- Charmaz, K., & Belgrave, L. (2012). Qualitative interviewing and grounded theory analysis. *The SAGE handbook of interview research: The complexity of the craft*, 2, 347-365.

- Chen, B., & Bryer, T. (2012). Investigating instructional strategies for using social media in formal and informal learning. *The International Review of Research in Open and Distributed Learning*, 13(1), 87-104.
- Christensen, C. M., Johnson, C. W., & Horn, M. B. (2010). *Disrupting class*. McGraw-Hill.
- Coalition for Responsible Home Education (2013). How Have Scholars Divided Homeschoolers into Groups. Retrieved from <https://www.responsiblehomeschooling.org/homeschooling-101/how-have-scholars-divided-homeschoolers-into-groups/>
- Collins, A., & Halverson, R. (2010). The second educational revolution: Rethinking education in the age of technology. *Journal of computer assisted learning*, 26(1), 18-27.
- Collom, E. (2005, May). The ins and outs of homeschooling: The determinants of parental motivations and student achievement. *Education and Urban Society*, 37(3), 307-335.
- Collom, E., & Mitchell, D. E. (2005). Home Schooling as a social movement: Identifying the determinants of homeschoolers' perceptions. *Sociological Spectrum*, 25(3), 273-305.
- Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007). Qualitative research designs: Selection and implementation. *The counseling psychologist*, 35(2), 236-264.
- Creswell, J. W. (2007). Five qualitative approaches to inquiry. *Qualitative inquiry and research design: Choosing among five approaches*, 2, 53-80.
- Creswell, J. W., Clark Plano, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. *Handbook of mixed methods in social and behavioral research*, 209, 240.
- Cuban, L. (2001). Oversold and underused: Reforming schools through technology, 1980-2000.

- Davis, K. B. (2014). *The ultimate guide for using technology in homeschool*. Available from <http://homeschoolforrealfamilies.com/book-link/Earl>
- Dewey, J. (1902). *The child and the curriculum* (No. 5). University of Chicago Press.
- Dewey, J. (1902). *The school and society*. University of Chicago Press.
- Dewey, J. (1903). Democracy in Education. *The Elementary School Teacher*, 4(4) 193-204.
- Dewey, J. (1938, 1997). *Experience and Education*. New York, NY: Touchstone.
- Dewey, J. (1938, 2012). Education and Democracy in the World Today. *Studies in Education*, 9(1) 96-100.
- Dewey, J., & Jackson, P. W. (1990). *The School and Society and the Child and the Curriculum a Centennial Publication*.
- DiMaggio, P., & Hargittai, E. (2001). From the 'digital divide' to 'digital inequality': Studying Internet use as penetration increases. *Princeton: Center for Arts and Cultural Policy Studies, Woodrow Wilson School, Princeton University*, 4(1), 4-2.
- Dobson, J. C. (2005). *Bringing up boys*. Tyndale House Publishers, Inc..
- Dobson, J. C., & Bauer, G. L. (1994). *Children at risk*. W Publishing Group.
- Emerson, R. M., Fretz, R. I., & Shaw, L. L. (1995). Writing Up Fieldnotes II: Creating Scenes on the Page. *Writing Ethnographic Fieldnotes*, 66-107.
- English, R. (2016). Techno teacher moms: Web 2.0 connecting mothers in the home education community. *Gender considerations in online consumption behavior and Internet use* (pp. 96-111). IGI Global.
- Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of research on Technology in Education*, 42(3), 255-284

- Etikan, I. Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4.
- Fabos, B., & Young, M. D. (1999). Telecommunication in the classroom: Rhetoric versus reality. *Review of educational research*, 69(3), 217-259.
- Farris, M. P. & Woodruff, S. A. (2000). The Future of Home Schooling, *Peabody Journal of Education*, 75(1-2), 233-255, DOI: 10.1080/0161956X.2000.9681943
- Felder, R. M., & Brent, R. (1996). Navigating the bumpy road to student-centered instruction. *College teaching*, 44(2), 43-47.
- Fosnot, C. T., & Perry, R. S. (1996). Constructivism: A psychological theory of learning. *Constructivism: Theory, perspectives, and practice*, 2, 8-33.
- Fricke, R. D., & Schonlau, M. (2002). Advantages and disadvantages of Internet research surveys: Evidence from the literature. *Field methods*, 14(4), 347-367.
- Gaither, M. (2017, May). Homeschooling in the United States: A review of select research topics. *Pro-Posições*. 28(2); 213-241. DOI 10.1590/1980-6248-2015-0171
- Gaither, M. (2014, December). How to Mislead with Data: A Critique of Brian Ray's Methodology. Retrieved from <https://icher.org/blog/?p=1440>
- Gaither, M. (2012, October). Academic Achievement and Demographic Traits: The Most Recent Study of Brian D. Ray. Retrieved from <http://icher.org/blog/?p=286>
- Gardner, H. E. (2008). *Multiple intelligences: New horizons in theory and practice*. Basic books.
- Gaultney, K. (2016). Home education on the rise in Europe. *World*. Retrieved from [https://world.wng.org/2016/01/home\\_education\\_on\\_the\\_rise\\_in\\_europe](https://world.wng.org/2016/01/home_education_on_the_rise_in_europe)
- Gee, J. P. (2013). *The anti-education era: creating smarter student through digital learning*. New York, NY: Palgrave Macmillan.

- Gibbs, G. R. (2007). *Analysing qualitative data*. Thousand Oaks, CA: Sage.
- Gikas, J., & Grant, M. M. (2013). Mobile computing devices in higher education: Student perspectives on learning with cellphones, smartphones & social media. *The Internet and Higher Education, 19*, 18-26.
- Glesne, C. & Peshkin, A. (1992). Writing your story: What your data say. *Becoming qualitative researchers: An introduction*. NY: Longman, 151-172.
- Griffiths, M. (1999). Internet addiction: fact or fiction?. *The Psychologist*.
- Grubb, D. (1998). Homeschooling: Who and Why?.
- Hanna, L. G. (2012). Homeschooling education: Longitudinal study of methods, materials, and curricula. *Education and Urban Society, 44*(5), 609-63.
- Haverluck, M. F. (April, 2017). Dobson urges Christians to flee public schools. *OneNewsNow*. Retrieved from <https://www.onenewsnow.com/education/2017/04/02/dobson-urges-christians-to-flee-public-schools>
- Hewitt-Taylor J. (2001). Use of constant comparative analysis in qualitative research. *Nursing Standard, 15*, 42, 39-42.
- Holt, J. C. (1982). *Teach your own*. Delta Trade Paperbacks.
- Homeschool Base (Staff, 2017). "The Most Popular Facebook Homeschool Groups - Ranked & Searchable (Over 700)" Retrieved from <https://homeschoolbase.com/facebook-homeschool-groups/>
- Home School Legal Defense Association (HSLDA) (2017). Retrieved at <https://www.hslda.org/default.aspx>
- Hughes, K. A. (2004). Comparing pretesting methods: Cognitive interviews, respondent debriefing, and behavior coding. *Survey Methodology, 2*, 1-20.

- Hunter, J. (2015). *Technology integration and high possibility classrooms: Building from TPACK*. Routledge.
- Inan, F. A., & Lowther, D. L. (2010). Factors affecting technology integration in K-12 classrooms: A path model. *Educational Technology Research and Development*, 58(2), 137-154.
- Isenberg, E. J. (2007). What have we learned about homeschooling? *Peabody Journal of Education*, 82(2-3), 387-409.
- Jacob, S. A., & Furgerson, S. P. (2012). Writing interview protocols and conducting interviews: Tips for students new to the field of qualitative research. *The Qualitative Report*, 17(42), 1-10.
- Jacobson, M. (2011, September). Homeschooling and Technology: The Allure for Modern Families. Retrieved from <https://www.parentmap.com/article/homeschooling-and-technology>
- Kansas State Department of Education (KSDE) (2018). Non-accredited private schools. Retrieved from <https://www.ksde.org/Agency/Division-of-Learning-Services/Career-Standards-and-Assessment-Services/CSAS-Home/Graduation-and-Schools-of-Choice/Non-Accredited-Private-Schools>
- Kliebard, H. M. (1982). Curriculum theory as metaphor. *Theory into practice*, 21(1), 11-17.
- Kochenderfer, R. (2016). Homechooling Approaches. Retrieved from <http://www.homeschool.com/Approaches/>
- Kunzman, R. (2017). Homeschooling and religious fundamentalism. *International Electronic Journal of Elementary Education*, 3(1), 17-28.

- Kunzman, R., & Gaither, M. (2013). Homeschooling: A comprehensive survey of the research. *Other Education*, 2(1), 4-59.
- Kvale, S. (2006). Dominance through interviews and dialogues. *Qualitative inquiry*, 12(3), 480-500.
- Lareau, A. (1996). Assessing parent involvement in schooling; A critical analysis. *Family-school links: How do they affect educational outcomes*, 57, 64.
- Levin, T., & Wadmany, R. (2008). Teachers' views on factors affecting effective integration of information technology in the classroom: Developmental scenery. *Journal of Technology and Teacher Education*, 16(2), 233-263.
- Li, Q. (2007). Student and teacher views about technology: A tale of two cities?. *Journal of research on Technology in Education*, 39(4), 377-397.
- Liberto, G. (2016). Child-led and interest-inspired learning, home education, learning differences and the impact of regulation. *Cogent Education*, 3(1), 1194734.
- Lieberman, D. A., & Linn, M. C. (1991). Learning to learn revisited: Computers and the development of self-directed learning skills. *Journal of research on computing in education*, 23(3), 373-395.
- Lines, P. M. (1993). *Homeschooling: Private choices and public obligations*. Office of Research, Office of Educational Research and Improvement, US Department of Education.
- Lines, P. M. (1999). Homeschoolers: Estimating Numbers and Growth. Retrieved from <https://files.eric.ed.gov/fulltext/ED456167.pdf>
- Lips, D., & Feinberg, E. (2008). Homeschooling: A Growing Option in American Education. *Heritage Foundation*. Background. No. 2122.



- Livingstone, S., & Bovill, M. (2001). Families and the internet: an observational study of children and young people's internet use.
- Lois, J. (2013). *Home is where the school is: The logic of homeschooling and the emotional labor of mothering*. NYU Press.
- Longo, B. (2014). Using social media for collective knowledge-making: Technical communication between the global north and south. *Technical Communication Quarterly*, 23(1), 22-34.
- MacCloud, A. and Hasan, S. (2017). Where Our Students are Educated: Measuring Student Enrolment in Canada, 2017. Fraser Institute. Retrieved from <https://www.fraserinstitute.org/studies/where-our-students-are-educated-measuring-student-enrolment-in-canada-2017>
- Maxwell, J. A. (2005). *Qualitative research design. 3rd edition*. Newbury Park, CA: Sage.
- McCracken, C. (2014). How to mislead with data: a critical review of Ray's 'academic achievement and demographic traits of homeschool students: a nationwide study' (2010). *Coalition for Responsible Home Education*.
- Means, B. (2010). Technology and education change: Focus on student learning. *Journal of research on technology in education*, 42(3), 285-307.
- Mehan, H. (1989). Microcomputers in classrooms: Educational technology or social practice?. *Anthropology & Education Quarterly*, 20(1), 4-22.
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.

- Mertz, N. T., & Anfara, V. A. (2006). Conclusion: Coming full circle. *Theoretical frameworks in qualitative research*, 189-196.
- Meyer, L. (2016). Home connectivity and the homework gap. *THE Journal (Technological Horizons In Education)*, 43(4), 16.
- Mitchell, A., & Savill-Smith, C. (2004). *The use of computer and video games for learning: A review of the literature*. Retrieved from [http://dera.ioe.ac.uk/5270/7/041529\\_Redacted.pdf](http://dera.ioe.ac.uk/5270/7/041529_Redacted.pdf)
- Molnar, A., Miron, G., Gulosino, C., Shank, C., Davidson, C., Barbour, M. K., ... & Nitkin, D. (2017). Virtual schools report 2017. *Boulder, CO: National Education Policy Center*. Retrieved September, 23(3017), 6-10.
- Moore, D. (2009). Homeschool Safety. *School Planning and Management*. Retrieved from [http://www.peterli.com/spm/resources/articles/archive.php?article\\_id=2079](http://www.peterli.com/spm/resources/articles/archive.php?article_id=2079)
- Murphy, J. (2013). Explaining the change in homeschooling, 1970-2010. *Home School Researcher Journal*, 29(1), 1-33.
- Nalwa, K., & Anand, A. P. (2003). Internet addiction in students: A cause of concern. *Cyberpsychology & behavior*, 6(6), 653-656.
- Neil, T., Bonner, N., & Bonner, D. (2014). An investigation of factors impacting the use of technology in a home school environment. *Contemporary Issues in Education Research (Online)*, 7(2), 107.
- Opdenakker, R. (2006, September). Advantages and disadvantages of four interview techniques in qualitative research. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* (Vol. 7, No. 4).
- Papert, S. (1980). *Mindstorms: Children, computers, and powerful ideas*. Basic Books, Inc.

- Papert, S. (c. 1985). MIT Media Lab. Retrieved at  
<https://www.youtube.com/watch?v=EnoPpevJUJ8>
- Papert, S. (1993). *The children's machine: Rethinking school in the age of the computer*.  
Basic books.
- Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the horizon*, 9(5), 1-6.
- Ray, B. D. (2018). The Relationship Between the Degree of State Regulation of Homeschooling and the Abuse of Homeschooled Children (Students). Retrieved from  
<https://www.nheri.org/2018/03/15/degree-of-homeschool-regulation-no-relationship-to-homsechool-child-abuse/>
- Ray, B. D. (2016). Research Facts on Homeschooling. *National home education research institute*. Retrieved from <https://www.nheri.org/research-facts-on-homeschooling/>
- Ray, B. D. (2011). 2.04 million homeschool students in the United States in 2010. *National Home Education Research Institute*.
- Ray, B. D. (2010). Academic achievement and demographic traits of homeschool students: A nationwide study. *Academic Leadership: The Online Journal*, 8(1), 7.
- Ray, B. D. (2004). Home Educated and Now Adults: Their Community and Civic Involvement, Views about Homeschooling, and Other Traits. *National Home Education Research Institute (NJ3)*.
- Redford, J., Battle, D. & Bielick, S. (2016). Homeschooling in the United States: 2012. NCES 2016-096. *National Center for Education Statistics*
- Reich, R. (2002). The Civic Perils of Homeschooling. *Educational Leadership*, 59(7), 56-59.
- Relan, A., & Gillani, B. B. (1997). Web-based instruction and the traditional classroom: Similarities and differences. *Web-based instruction*, 62, 41-46.

- Ricci, C., Laricchia, P., & Desmarais, I. (2011). What Unschooling is and What it Means to Us. *Our Schools/Our Selves*, 20(2).
- Richards, L., & Morse, J. M. (2012). *Readme first for a user's guide to qualitative methods*. Sage.
- Rolstad, K., & Kesson, K. (2013). Unschooling, Then and Now. *Journal of Unschooling & Alternative Learning*, 7(14).
- Romanowski, M. H. (2006). Revisiting the common myths about homeschooling. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 79(3), 125-129.
- Roskamp, J. (2017). "5 Steps to Follow When Choosing Homeschool Curriculum." *The intentional mom*. Retrieved from <https://www.theintentionalmom.com/about-us/>
- Ross, C. J. (2009). Fundamentalist challenges to core democratic values: Exit and homeschooling. *Wm. & Mary Bill Rts. J.*, 18, 991.
- Rubin, H. J. & Rubin, I. S. (2005) *Qualitative interviewing: The art of hearing data*. Thousand oaks, CA: Sage.
- Russell, M., Bebell, D., O'Dwyer, L., & O'Connor, K. (2003). Examining teacher technology use: Implications for preservice and inservice teacher preparation. *Journal of teacher Education*, 54(4), 297-310.
- Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field methods*, 15(1), 85-109.
- Saettler, P. (2004). *The evolution of American educational technology*. IAP.
- Seelhoff, C. L. (2001). A Homeschooler's History of Homeschooling, Part III. *Gentle Spirit Magazine*, 7(1), 54-60.

- Sengupta, A. & Chauduri, L. (2011). Are social networking sites a source of online harassment for teens? Evidence from survey data. *Children and Youth Services Review*, 33(2) 284-290.
- Shaw, D. M., Barry, A., & Mahlios, M. (2008). Preservice teachers' metaphors of teaching in relation to literacy beliefs. *Teachers and Teaching: theory and practice*, 14(1), 35-50.
- Sidney Howland, J. (1998). The 'digital divide': are we becoming a world of technological 'haves' and 'have-nots?'. *The Electronic Library*, 16(5), 287-289.
- Smaldino, S. E., Lowther, D. L., Russell, J. D., & Mims, C. (2008). Instructional technology and media for learning.
- Snider, J. H. (May/June 1996). Education wars: The battle over information-age technology. *The Futurist* 30, p. 3-24.
- Stahl, G., Koschmann, T. D., & Suthers, D. D. (2006). *Computer-supported collaborative learning*. na.
- Stambach, A., & David, M. (2005). Feminist theory and educational policy: How gender has been "involved" in family school choice debates. *Signs: Journal of Women in Culture and Society*, 30(2), 1633-1658.
- Tannehill, D., & MacPhail, A. (2014). What examining teaching metaphors tells us about pre-service teachers' developing beliefs about teaching and learning. *Physical Education and Sport Pedagogy*, 19(2), 149-163.
- Taylor-Hough, D. (2010). Are All Homeschooling Methods Created Equal?. *Online Submission*.
- Thieman, G. (2008). Using technology as a tool for learning and developing 21st century skills: An examination of technology use by pre-service teachers with their K-12 students. *Contemporary Issues in Technology and Teacher Education*, 8(4), 342-366.

- Thompson, C. (2013). *Smarter than you think: How technology is changing our minds for the better*. Penguin.
- Tobin, K. (1990). Changing metaphors and beliefs: A master switch for teaching?. *Theory into practice*, 29(2), 122-127.
- Tocqueville, Alexis de. (1835). *Democracy in America*. 2003. New York, NY: Putnam.
- Turkle, S. (2017). *Alone together: Why we expect more from technology and less from each other*. Hachette UK.
- Tyack, D. B., & Cuban, L. (1995). *Tinkering toward utopia*. Harvard University Press.
- United States Department of Education (2017, January). Reimagining the Role of Technology in Education. *Office of Educational Technology*. Retrieved from <https://tech.ed.gov/netp/infrastructure/>
- Van Galen, J. A. (1988). Ideology, Curriculum, and Pedagogy in Home Education. *Education and Urban Society*, 21(1), 52-68.
- Walcott, H. F. (1994). Transforming qualitative data: Description, analysis, and interpretation. Thousand Oaks, CA: Sage Publications.
- Walters, L. A. (2015). *Relationships of parental homeschooling approaches including technology integration*. Dissertation. Paper 106.
- West, R. L. (2009). The harms of homeschooling. *Philosophy & Public Policy Quarterly*, 29(3/4), 7-12.
- Wood, R., & Ashfield, J. (2008). The use of the interactive whiteboard for creative teaching and learning in literacy and mathematics: a case study. *British journal of educational technology*, 39(1), 84-96.

- Young, K. S. (2004). Internet addiction: A new clinical phenomenon and its consequences. *American behavioral scientist*, 48(4), 402-415.
- Yuracko, K. A. (2008). Education off the grid: Constitutional constraints on homeschooling. *Cal. L. Rev.*, 96, 123.
- Zhao, Y., & Cziko, G. A. (2001). Teacher adoption of technology: A perceptual control theory perspective. *Journal of technology and teacher education*, 9(1), 5-30.

# Appendix A

## IRB Approval Letter of Protocol



### APPROVAL OF PROTOCOL

November 20, 2017

Beverly Pell  
beverly.pell@ku.edu

Dear Beverly Pell:

On 11/20/2017, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	Parents' Motivation for Using Computers for Homeschooling
Investigator:	Beverly Pell
IRB ID:	STUDY00141693
Funding:	None
Grant ID:	None
Documents Reviewed:	• Pell_KU_Human_Research_Protocol.pdf, • pell_proposal.pdf, • Pell_Study_Letter_of_Consent.pdf, • Pell_Study_Letter_of_Consent.pdf, • Pell_Study_Questionnaire_Survey.pdf

The IRB approved the study on 11/20/2017.

1. Notify HRPP about any new investigators not named in original application. Note that new investigators must take the online tutorial at [https://rgs.drupal.ku.edu/human\\_subjects\\_compliance\\_training](https://rgs.drupal.ku.edu/human_subjects_compliance_training).
2. Any injury to a subject because of the research procedure must be reported immediately.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity.

Continuing review is not required for this project, however you are required to report any significant changes to the protocol prior to altering the project.

Please note university data security and handling requirements for your project:  
<https://documents.ku.edu/policies/IT/DataClassificationandHandlingProceduresGuide.htm>

You must use the final, watermarked version of the consent form, available under the "Documents" tab in eCompliance.

Sincerely,

Jocelyn Isley, MS, CIP  
Interim IRB Administrator, KU Lawrence Campus





## Appendix C

### Survey Questions

Q1 - Introduction to survey

Q2 - How many years have you homeschooled?

- 0-3
- 4-7
- 8-11
- 12-15
- 16-19
- 20+

Q3 - How many children have you homeschooled, or are you currently homeschooling?

- 1
- 2
- 3
- 4
- 5
- 6 (or more)

Q4 - I teach or have taught the following grade levels. Please select all that apply.

- (K-3)
- (4-6)
- (7-9)
- (10-12)

Q5 - Which of the following terms best describes your homeschooling method? Please select all that apply.

- Traditional Homeschooling
- Unschooling
- Distance Learning
- Virtual School
- Online Courses

- Cyberschool
- Other, please specify in box

Q6 - Please rank the top reasons you are homeschooling, or have homeschooled, your child(ren):

- Dissatisfaction with traditional schools' academic performance
- Concern about the environment of other schools
- Desire to provide religious instruction
- Family bonding
- Desire to provide nontraditional education
- Child(ren) with special needs
- Other, please specify in box

Q7 - I am proficient in using technology.

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Q8 - I am comfortable learning and working with new technologies.

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Q9 - Technology is critical to the learning experience of my child(ren).

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree

- Somewhat disagree
- Disagree
- Strongly disagree

Q10 - I use technology for networking with other parents who homeschool (e.g., Facebook, Instagram, Twitter).

- Yes
- No

Q11 - My child(ren) has a personal social networking site (e.g., Facebook, Instagram, Twitter).

- Yes
- No

Q12 - My child(ren) has his/her own computer or mobile device.

- Yes
- No

Q13 - My child(ren)'s access to technology is regulated.

- Yes
- No

Q14 - Which statement best describes the way you view technology use in your school?

- I am the teacher and technology is my assistant.
- Technology is the teacher and I am the facilitator.
- Technology and I are co-teachers.
- My children use technology to teach themselves and I am the cheerleader.
- Other, please describe in box

Q15 - Which technology devices do you use in your homeschool? Please select all that apply.

- Desktop computer
- Laptop computer
- Tablet (e.g., iPad, Nexus, etc.)
- Smart phone
- e-reader (e.g., nook, Kindle, etc.)
- iPod

Q16 - My child(ren) has strong technology skills.

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Q17 - My child(ren) is encouraged to use technology for school projects.

- Yes
- No

Q18 - My child(ren) frequently uses a computer for homework.

- Yes
- No

Q19 - My child is enrolled in an online course.

- Yes
- No

Q20 - What course subject(s) does your child(ren) take online? Please select all that apply.

- My child(ren) does not take online courses
- Math
- English
- Science
- History
- Foreign Language
- Art
- Music
- Other, please specify in box

Q21 - My child is enrolled in a Virtual School.

- Yes
- No

Q22 - Approximately what percent of your child(ren)'s schooling utilizes online courses or a virtual program?

- Not Applicable
- 10%
- 25%
- 33%
- 50%
- 67%
- 75%
- 100%

Q23 - What is most satisfying for you when homeschooling with technology?

Q24 - What are some of the challenges of using technology in a homeschool environment?

Q25 - How has your use of technology in your homeschool changed over the years?

Q26 - Is there anything else you would like to share about your experience using technology for homeschooling?

Q27 - What is your age?

- younger than 25
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 - 74
- 75 or older

Q28 - Your Gender?

- Male
- Female

Q29 - What is your Marital Status?

- Married
- Single
- Divorced
- Separated
- Widowed

Q30 - What is your Ethnicity?

- White/Caucasian
- Black or African American
- Hispanic or Latino
- Asian
- Native American
- Hawaiian/Other Pacific Islander
- Other, please specify in box below

Q31 – State of Residence?

Q32 – What is the highest degree or level of school you have completed?

Q33 - What is your Employment Status while Homeschooling?

- Not employed outside the home
- Employed part time outside the home
- Employed part time inside the home
- Employed full time outside the home
- Employed full time inside the home

Q34 - Annual Household Income?

- Less than \$20,000
- \$20,000 - \$40,000
- \$41,000 - \$60,000
- \$61,000 - \$80,000
- \$81,000 - \$100,000
- \$101,000 - \$130,000
- \$131,000 - \$150,000
- More than \$150,000

## Appendix D

### States, Countries, Districts, and Provinces of Respondents

Alabama (4)	New Hampshire (2)
Arizona (2)	New Jersey (1)
Arkansas (1)	New York (2)
California (14)	North Carolina (5)
Colorado (6)	North Dakota (1)
Connecticut (2)	Ohio (5)
Florida (5)	Oregon (1)
Georgia (13)	Pennsylvania (5)
Idaho (2)	Tennessee (5)
Illinois (5)	Texas (17)
Indiana (4)	Utah (1)
Iowa (3)	Vermont (2)
Kansas (27)	Virginia (9)
Kentucky (4)	Washington (6)
Maine (1)	West Virginia (3)
Maryland (2)	Wisconsin (2)
Massachusetts (1)	Washington D. C. (1)
Michigan (7)	Australia (4)
Minnesota (2)	Canada (39)
Missouri (18)	Ireland (1)



Montana (1)

New Zealand (1)

Nebraska (1)

Philippines (1)

Nevada (1)

United Kingdom (52)

United States – 66%

United Kingdom – 18%

Canada – 13%

Others - .03%

Survey Responses regarding residence: 292